City and County of San Francisco
Department of City Planning



Environmental Impact Report

# 333 Bush Street

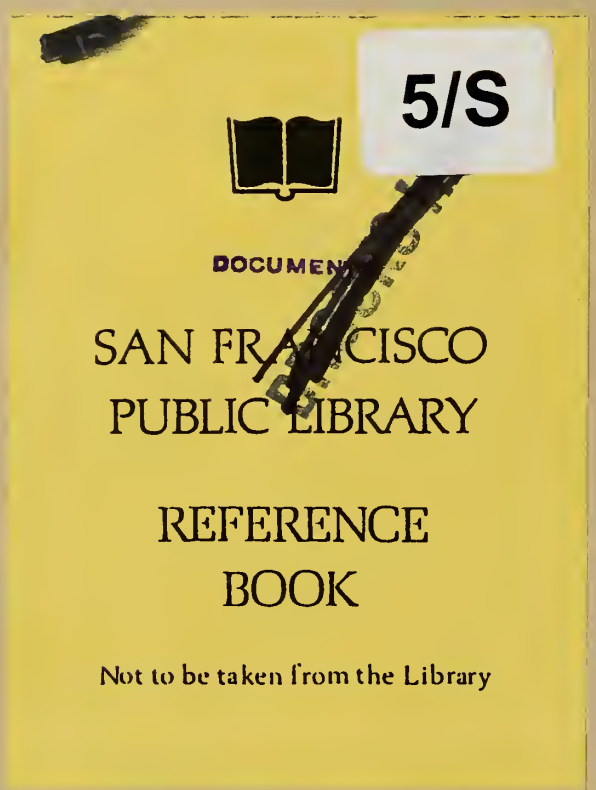
Draft

81.461E

September 1982

Publication Date: September 10, 1982
Public Comment Period: September 10, 1982 through October 25, 1982
Public Hearing Date: October 14, 1982

Written Comments should be sent to the
Environmental Review Officer, 450 McAllister Street, 5th Floor
San Francisco, California 94102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# I. SUMMARY

## A. PROJECT DESCRIPTION

The project sponsor, Campeau Corporation California, proposes to construct a 38-story, combined office and residential building in the western Financial District. The site is on the block bounded by Bush St. on the north, Montgomery St. on the east, Sutter St. on the south, and Kearny St. on the west. The project is intended to satisfy some of the existing demand for both office space and housing in San Francisco, and to provide a financial return.

The height of the proposed building would be 500 ft.; the project would contain about 634,046 gross sq. ft. of floor area. The ground floor would provide about 10,580 gross sq. ft. of commercial/retail space. Above the ground level would be the Terrace Level, which would contain 11,900 gross sq. ft. of office space, and two publicly accessible plazas totaling 11,850 sq. ft., accessible from two stairways on Bush St. The building would contain about 521,805 gross sq. ft. of office space, comprised of the Terrace Level (11,900 sq. ft.), 29 floors of office space (501,700 sq. ft.), and office lobby (8,205 sq. ft.). Above the office space would be a mechanical floor and seven floors of residential condominiums containing 56 units. The building would include two subsurface parking levels, which through valet parking, would accommodate about 100 vehicles. Four truck and six service van spaces, accessible from Bush St, would be provided at the highest subsurface level.

There would be a residential entry court and lobby on Bush St. Project entrances would be through a main lobby on Bush St., a secondary entrance on Trinity St. near Sutter St., and two sets of stairs from Bush St. leading to the Terrace Level and public plazas; in addition, there would be several street-level entries to retail spaces.

The 31,590-sq.-ft. project site, is zoned C-3-O (Downtown Office) and is in a 500-I Height and Bulk district. The six buildings on the site range from two

to six stories and contain retail, commercial, restaurant, and parking uses. Four of these buildings are in mixed use, incorporating ground floor retail or restaurant uses with office or parking above. There are two parking structures on the site containing 360 parking spaces; one building is four stories, the other seven. The seven-story building, the Financial Center Garage, is rated "B" by the Heritage Foundation survey and "0" in the Department of City Planning 1976 Architectural Survey. All buildings on the site are proposed to be demolished. As part of the project the sponsor would contribute to the preservation of the adjacent Hallidie Building, a City Landmark.

## B. ENVIRONMENTAL EFFECTS

The proposed project would comply with the restrictions of the 500-I Height and Bulk district. Along the Bush St. property line the tower would be about 90 ft. wide; in two set-back increments its width would increase to a maximum of 152 ft., 18 ft. less than the permitted maximum of 170 ft. The diagonal dimension of 170 ft. would be about 30 ft. less than the permitted maximum of 200 ft.

Parcels comprising the site have a basic permitted Floor Area Ratio (FAR) of 14:1. One-half of the development rights of one parcel, Lot 26, has been used in the 101 Montgomery St. project now under construction. Therefore, at present, 413,385 sq. ft. could be constructed on the site, corresponding to a FAR of 13.1:1. Transfer of 119,000 sq. ft. from the historically and architecturally significant Hallidie Building (on Sutter St.) is proposed for an additional FAR of 3.8:1; and, the project would qualify for 113,532 sq. ft. of bonus space to be applied to housing (an FAR of 3.6:1) under the Interim Controls. The project proposes 101,661 sq. ft. for this use, 11,871 sq. ft. less than the maximum allowable. Thus the total FAR which could be allowed for the site would be 20.4:1, or 645,917 sq. ft. The proposed project would have an FAR of 20.1:1 (634,046 sq. ft.)

According to the Department of City Planning housing formula, the project would generate a demand for about 464 units of housing in San Francisco. The project would provide about 56 on-site residential units. Because these units

would be on-site and would include two bedrooms each, they would qualify for 112 housing credits under the Office Housing Production Program guidelines. (It should be noted that credits are not equivalent to units; that is, they are not interchangeable.)

Due to the prominence of taller structures in the area, the project would not be a major visual element on the City skyline. The project would be visible from some mid- and long-range viewpoints, including Twin Peaks. It would interrupt some views of Potrero Hill and the Hunter-Dulin Building from the northwest. From immediately surrounding streets, particularly west of the project site, the building would be visible above adjacent structures; from Sutter St. it would be visible above the Hallidie Building. From Montgomery St. and east of the project site on Bush St. the project would be partially blocked from view by the Alexander Building and the 101 Montgomery St. building, currently under construction.

The project shadow pattern would largely coincide with shadows cast by existing structures and the 101 Montgomery St. building now under construction. The project would shade northern sidewalks on Bush St. in summer months and would create a more extended shadow pattern than exists at present, predominantly north and northeast of the site. The project would not shade any existing public parks or open space.

As a result of the project, wind speed ratios (the ratio of wind speeds at the surface to wind speeds at about 1000 ft. above the surface) for west winds on Bush St. (on both sides of the street and east of Montgomery St.), would increase from low to moderately low. Wind speed ratios of southwest winds would increase but remain moderate at the Kearny / Sutter Sts. intersection, and would decrease slightly from moderate to the low end of moderate and moderately low at other locations on Kearny St. including its intersections with Hardie Place and Bush St. Wind speed ratios for northwest winds would increase slightly at most locations measured, and would decrease on Trinity St. These effects take into consideration potential construction of highrises proposed for 222 Kearny, and 466 and 350 Bush St.

The project would cause demolition of the six existing buildings on site, which include 17,670 gross sq. ft. of office space, 27,157 gross sq. ft. of retail and restaurant space and 89,376 gross sq. ft. of parking space (360 spaces). Upon completion, the project would result in about 521,805 gross sq. ft. of office space, an increase of 500,010 sq. ft.; 101,661 gross sq. ft. of residential space where there is now none; 100 parking spaces, a decrease of 260 spaces; and approximately 10,580 gross sq. ft. of commercial/retail space, a decrease of about 12,452 sq. ft.

The net increase in permanent employment at the site would be about 1,995 jobs, upon project completion. About 2,390 secondary jobs in other sectors of the Bay Area economy would also result from the project. The project would require about 550 person-years of construction labor over a nearly two-year construction period. About 850 additional labor-years of employment would be generated in the Bay Area as a result of the multiplier effect of project construction.

The project would cause negligible peak-hour increases in traffic volumes on freeway feeder streets and streets near the proposed project. The impact of the project would be an imperceptible lessening of the level of service of traffic operation on the street system, as increases are expected to be offset by the removal of the Financial Center Garage. Traffic currently using the Financial Center Garage would be expected to redistribute to other available garages in the project area (including the Sutter/Stockton Garage).

Traffic from cumulative development (including this project) in the Downtown would cause the level of service to worsen from D to F at the intersections of Mission St. at Beale St. and at Main St. The project would require seven off-street loading spaces which would be provided by a combination of four truck and six service van spaces on the highest subsurface level.

Of the 53 Muni lines serving the Downtown San Francisco area, 39 operate within a walking distance of 2,000 ft. of the site. Considering trips to be generated by cumulative development (including this project) in the Downtown, it is estimated that in 1987, 8 of these lines would operate beyond maximum

recommended capacity during the p.m. peak hour if current service levels were maintained. The project would contribute about 390 peak-hour trips to these lines, generally less than a two percent increase.

Air quality impacts associated with operation of the project would result primarily from vehicle emissions. Implementation of the project would add to local and regional accumulations of pollutants during adverse meteorological conditions. The project alone would have no measurable impact on citywide or regional air pollutant concentrations or on the frequency of violations of the standards. Cumulative development, including the project, could increase ambient concentrations of pollutants although no violations of standards are projected. The project would generate less than five one-hundredths of one percent of the 1987 cumulative Bay Area output of each major air pollutant.

Estimated total annual energy use for the project would be 164 billion Btu at-source. The structure would be designed in accordance with the minimum State energy efficiency standards. The project's heating, ventilating, and air conditioning (HVAC) system would be controlled for maximum efficiency. Energy used by the project would add to growth of cumulative consumption downtown but servicing the project would not necessitate construction of any new power plants.

Construction activities would temporarily increase noise levels in the site vicinity. The project would be expected to use a mat foundation, which would not require pile driving. Daytime sleepers in the Stanford Hotel, adjacent to the site, would be disturbed by noise levels of up to 88 dBA intermittently during the 12-month excavation and frame erection period.

The presence of 56 residential condominiums on the western edge of the City's Financial District could generate a demand for domestic retail services. To the extent that such services are not located within the project, new facilities could be induced to locate in the vicinity. The placement of residential units in this location could encourage other new development in the Financial District to include housing.

## C. MITIGATION MEASURES

Primary mitigation measures proposed as part of the project include:

- The project sponsor would provide public open space areas, multiple building entrances, and side setbacks to enhance the pedestrian environment of the Financial District, facilitate access to the building and reduce the cumulative effect on pedestrians of high-rise structures in the vicinity.

- Variations in the vertical building faces at the corners of the tower, including Terrace Level setbacks from Bush St., would result in an overall sculptured shape, reducing the apparent scale and bulk of the building as viewed from pedestrian level.

- The project would include pedestrian amenities along Trinity and Bush Sts., in ground-level areas and on the public plazas of the Terrace Level. These amenities would include pedestrian-scale retail uses on Bush St. and Trinity St.; landscaping designed to contribute to a visually interesting streetscape; multiple building entrances; and two public plazas removed from the street and enhanced for public use by landscaping, lighting, seating areas and wind protection.

- The project would include a total of 56 residential condominiums containing a total of 112 bedrooms, partially mitigating increased demands on the City's housing supply which would be generated by the project's office development.

- The project sponsor would comply with any measures adopted by the Board of Supervisors (pending the outcome of litigation) for funding of transit development and improvement to meet the peak transit demands caused by cumulative office development in the Downtown area.

- A transportation broker would be located in the project management office to encourage transit use through the on-site sale of BART, Golden Gate Bridge District, and Muni passes to employees, and to encourage employee car pool and van pool systems in cooperation with RIDES for Bay Area Commuters.

- Within a year of full project occupancy, the project sponsor would conduct a survey, in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants and actual pick-up and drop-off areas for carpools and vanpools, and would make this survey available to the Department.

- A variable air-volume ventilation system, equipped with an economizer cycle to reduce energy consumption for heating, ventilation, and air conditioning, would be used.

- The building would be equipped with a trash compactor for use by commercial, office and residential tenants to reduce the volume of solid waste requiring storage and transport.

- The project would be designed in accordance with the noise control guidelines contained in the Environmental Protection element of the San Francisco Comprehensive Plan for both residential and office uses.

- The general contractor would construct barriers around the site, and around stationary equipment such as compressors, which would reduce construction noise by as much as 5 dBA. Whenever possible, the general contractor would locate stationary equipment in pit areas or excavated areas which would serve as noise barriers.

- A detailed foundation and structural design study would be conducted for the building by a California-licensed structural engineer and a California-licensed geotechnical consultant. The project sponsor would follow the recommendations of these studies during the final design and construction of the project.

- Excavation pit walls would be shored and protected from slumping or lateral movement of soils into the pit.

- The level of the water table and potential settlement and subsidence will be monitored by the general contractor.

## D. ALTERNATIVES TO THE PROPOSED PROJECT

Alternative 1-A, the no-project alternative, would retain the existing structures. Environmental characteristics of this alternative would be the same as with present conditions.

Alternative 1-B would be the same project as proposed, developed elsewhere in San Francisco's Financial District or in another Bay Area location. If this project were developed at another site within the Financial District, impacts similar to the potential environmental impacts attributable to the project and described in Section IV, pp. 60-140, would occur at the alternative location.

Development elsewhere in San Francisco would be limited to the C-3-O district and would result in specific impacts comparable to those of the project, depending on the alternative location's conditions and existing uses.

Development outside of San Francisco would probably involve an office building without on-site housing; the magnitude of the impacts of such an alternative cannot now be accurately determined though the types of impacts would be similar to those of the proposed project.

Alternative 1-C would postpone site development at the proposed location without precluding development of the project elsewhere. Postponement of development at this site could result in piecemeal development if portions of the site were sold. Long-term protection of the Hallidie Building, through the project's proposed transfer and utilization of its unused air rights, would not be assured.

Alternative 2 would be a building constructed in accordance with the Pre-Interim Controls requirements, using maximum allowable bonuses applied to office uses, and transfer of development rights from the Hallidie Building to generate the maximum amount of office space. Office space only would be provided under this alternative. The alternative, because it would allow development of a building as large, or larger, than the proposed project, would have impacts as great, or greater, than those described in the Environmental Impact section of this report. This alternative has been included for purposes of comparison with the project as proposed, which would conform to the current Interim Controls and all existing height, bulk and zoning requirements. This alternative is currently unavailable for implementation because current Interim Controls provide that bonus space may only be applied to housing.

Alternative 3 would be a mixed-use project developed under the Interim Controls for office and residential uses that would provide 136 residential units on site. The design would be similar to the proposed project. Setbacks for the residential floors would begin at floor 21 of the tower, rather than the 32nd floor as proposed; building height would be 500 ft, as for the project. This alternative would provide about 55% less office space and more than two times as much housing as the proposed project, 136 units compared to 56 for the project. Retail space would be increased by about eight percent. Impacts on urban design, construction noise, geology, seismology, and hydrology would be similar to those of the project. There would be about 55% less employment provided; revenues to the City's General Fund would be decreased because of the revenue lost from primary and secondary effects of site employment.

Alternative 4 would be a project conforming to all Guiding Downtown Development (Department of City Planning, May 1981) (GDD) policies. The Financial Center Garage building at 355 Bush St. would be preserved. A building would be built with an office FAR of 12:1, plus transfer from the preserved structure up to an FAR of 3:1, a retail bonus (0.5:1), for a maximum FAR of 15.5:1. The building would conform to the proposed GDD height limit of 400 ft. and would have upper level setbacks similar to the project. The Financial Center Garage has been determined to be unsuited to conversion to

office use; it would be retained for valet parking with this alternative. Lot 28, owned by the sponsor, could not be used due to its physical separation from the rest of the site, which would result from preservation of the Financial Center Garage. This alternative would result in a building with about 70% of the gross office/commercial area of the project. It would result in fewer jobs, less revenue to the City, and no provision of on-site housing. Impacts of this alternative upon urban design, air quality, energy consumption, and construction noise would be less than those of the project. Increased transportation impacts from the preservation of the garage would be more than offset by the decreased size of this alternative. The 222,336 sq. ft. of housing proposed to be required under GDD due to construction of office space would be provided off site. The GDD open or recreational space recommendation for office developments would be met on the rooftop and terrace level plazas. If the on-site B-rated structure were preserved and its development rights transferred, the project sponsor would not need to obtain development rights from the Hallidie Building and would therefore not contribute to its long-term protection.

Alternative 5-A would retain the existing 360 parking spaces on the site . This alternative would keep both the B-rated building (discussed above) and the garage annex building on Lot 21. In most respects, this alternative would have impacts similar to those of the project. In addition, the existing parking supply would be maintained. Local traffic conditions would be worse than those from the proposed project, because, in addition to people with destinations in the project, the 360 parking spaces would continue to attract over three times as many automobiles to the site to park as would the project's proposed 100 spaces.

Alternative 5-B would retain 360 parking spaces on the site by increasing the depth of subsurface excavation and the number of subsurface levels in the project, or by providing some or all of the 360 spaces above grade. This alternative would have similar impacts to Alternative 5-A, with the exception of geologic and hydrologic impacts, which would be increased due to increased depth of excavation.

Alternative 5-C would be identical to the project except that parking would be provided only for residents. One parking level would contain either 14 parking spaces (one for every four dwelling units, conforming to the Planning Code minimum) or 56 parking spaces (one for each dwelling unit). 100 spaces are proposed for the project. The highest subsurface level would contain loading and service areas identical to the project. Impacts of this alternative would be the same as those of the project with the exception of traffic. About half as many vehicles would enter and exit the garage and traffic impacts would be slightly lessened.

Alternative 6 would be a mixed use building conforming to Interim Controls with office and residential space similar to the project, but with less retail space. The building would not have a base built out to the property lines on Bush and Trinity Sts.; the tower would rise from a ground level plaza. A ground-level plaza would replace the project's terrace level plaza and the base of the alternative would not extend beyond the footprint of the tower.

Impacts of this alternative on construction noise, geology, seismology, hydrology, architectural and cultural resources, energy, air quality, economics, and transportation would be similar to those of the project. This alternative would not maintain a continuous building frontage along Bush and Trinity Sts., therefore some shadows on Bush St. would be eliminated. Street-level wind impacts would be increased.

# II. PROJECT DESCRIPTION

## A. PROJECT SPONSOR'S OBJECTIVES

The project sponsor is Campeau Corporation California. Campeau proposes to construct a 38-story, combined office and residential building on a portion of Assessor's Block 288 fronting Bush St. and Trinity St. . The sponsor's objectives are to realize an adequate return on its investment, to develop and manage a high-quality project that provides office and retail space and supplies on-site housing and, to promote active day and evening use of San Francisco's downtown district. The sponsor intends the project to be in concert with many of the expressed goals of the City including those reflected in Guiding Downtown Development.

The project architect is Skidmore, Owings & Merrill of San Francisco.

## B. PROJECT LOCATION

The project site includes lots 20, 21, 22, 23, 26, and 28 in Assessor's Block 288. The block is bounded on the north by Bush St., on the south by Sutter St., on the west by Kearny St. and on the east by Montgomery St. (see Figures 1 and 2, pp. 14 and 15). The 31,590-sq.-ft. project site is zoned C-3-O (Downtown Office) and is in a 500-I Height and Bulk district (see Figures 14 and 15, pp. 37 and 38). Table 1 shows the existing uses on the site. Lot 26, at 25 Trinity St., is occupied by brick building of 2 stories and basement containing the Trinity Place restaurant and bar. Half of the development rights for this parcel, which has a total site area of 4,125 sq. ft., were used for the 101 Montgomery St. building now under construction across Trinity St. from the project site. The unused portion of

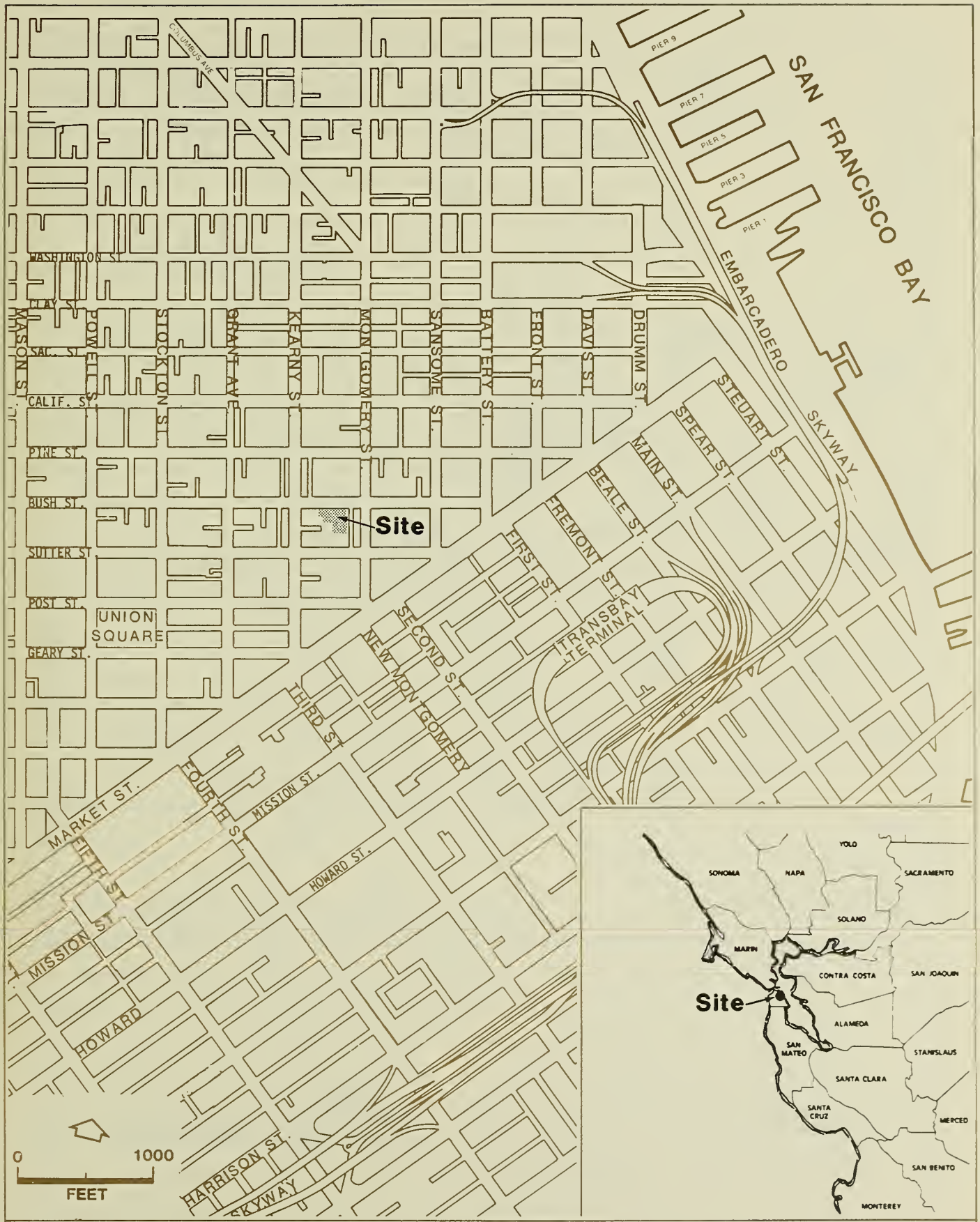
TABLE 1: EXISTING USES AT THE PROJECT SITE: Assessor's Block 288

| Lot* | Address | Existing Use | Square feet (Lot) | Gross Square feet (Building) | Stories |
|---|---|---|---|---|---|
| 20 | 355 Bush (Financial Center Garage building) | Restaurant/Parking | 8,594 | 60,158 | 7 |
| 21 | 351 Bush (Financial Center Garage Annex) | Parking Garage | 9,453 | 37,812 | 4 |
| 22 | 323-329 Bush | Retail/Office | 4,125 | 12,375 | 3 |
| 23 | 315-321 Bush | Restaurant/Office | 2,063 | 8,252 | 4 |
| 26 | 25 Trinity | Restaurant/Bar | 4,125** | 12,375 | 3 |
| 28 | 365 Bush | Office | 3,231 | 3,231 | 1 |
| TOTALS | | | 31,590 | 134,203 | |
| | Parking | | | 89,376 | |
| | Restaurant/Bar | | | 23,032 | |
| | Office | | | 17,670 | |
| | Retail | | | 4,125 | |

* See Figure 2, p. 15 for the lot locations.
** Note: One-half the development rights of this parcel, or 28,875 sq. ft., were used for the 101 Montgomery St. project, now under construction.

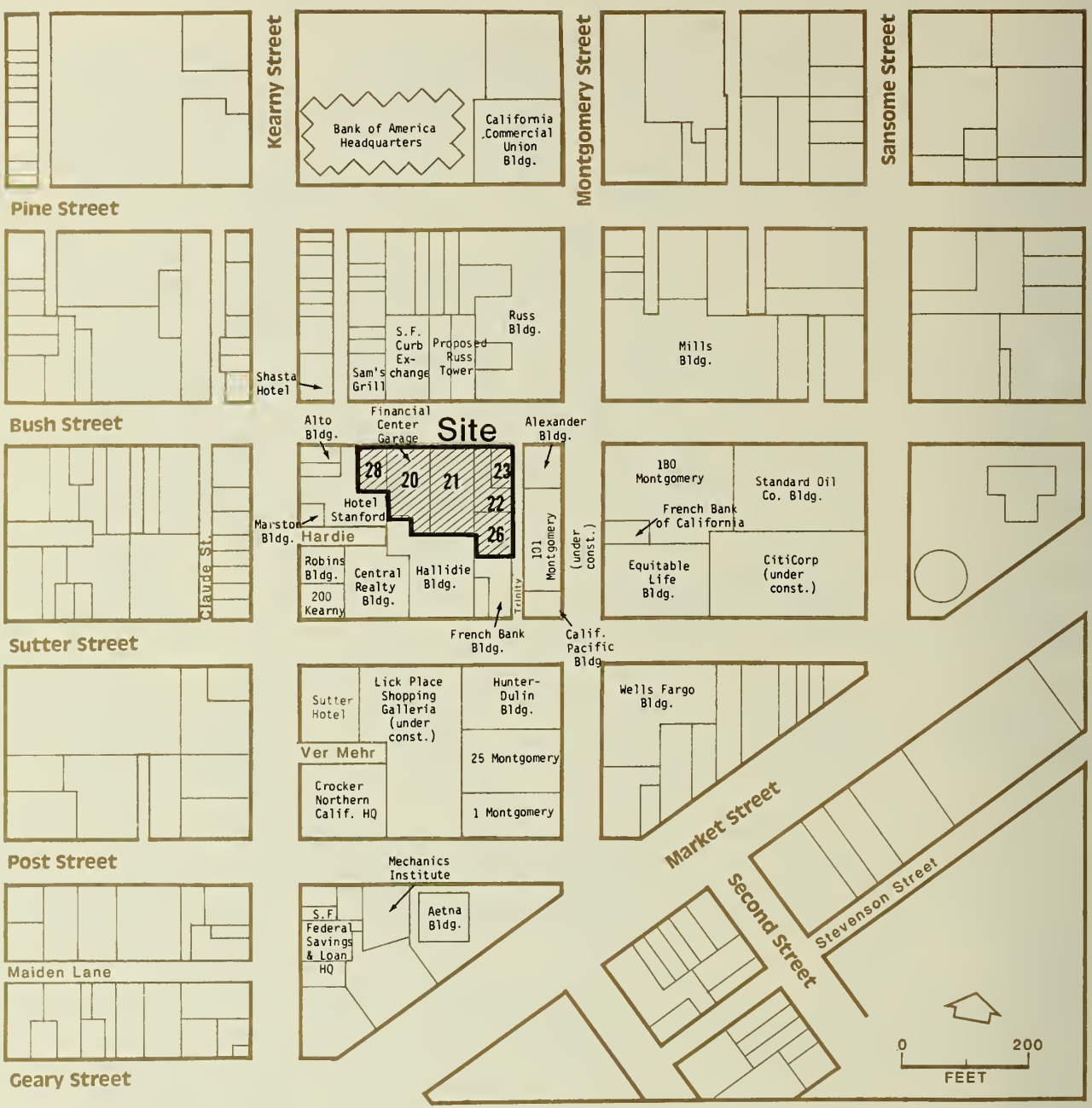
SOURCE: Environmental Science Associates, Inc.

the development rights, 28,875 sq. ft., would be used for the proposed project. Lot 23, at the corner of Bush St. and Trinity St., is occupied by a 4-story structure with the Metropol restaurant on the ground floor and office space above. The Jerome Building, on Lot 22 with frontage on Trinity St. and primary frontage on Bush St., contains three stories of office space over street-level commercial space. Lot 21 is occupied by a 4-story parking structure and Lot 20 by a 7-story parking structure with ground floor commercial space occupied by the Salamagundi restaurant. The parking garage on Lot 20 at 355 Bush St., is rated "B" on the Foundation for San Francisco's Architectural Heritage's (Heritage) 1979 Splendid Survivors survey of architecturally and historically significant buildings in San Francisco and




**SOURCE:** Environmental Science Associates, Inc.

FIGURE 1:
Project Location




NOTE: Lot numbers are shown for project site

FIGURE 2:
Project Site and Vicinity

SOURCE: Environmental Science Associates, Inc.

"O" on the San Francisco Department of City Planning's 1976 Architectural Survey. No other buildings on the site are rated in either survey. The adjacent Lot 28 contains a two-story office building. All buildings on the site would be demolished.

## C. PROJECT CHARACTERISTICS

The proposed project would be a 38-story, 500-foot-tall combined office and residential building with retail ground floor, over two basement levels. The project would front Bush and Trinity Sts. (see Figure 3, p. 19). The total allowable building area for the site has been calculated as follows: (1) all the undeveloped floor area of Lots 20, 21, 22, 23, and 28 (27,465 sq. ft.) at an FAR of 14:1, or 384,510 sq. ft.; (2) one-half of the undeveloped floor area of Lot 26 (2,062 sq. ft.) at an FAR of 14:1, or 28,875 sq. ft. (the other half having been used for 101 Montgomery St.); (3) transfer of 119,000 sq. ft. of undeveloped floor area from the Hallidie Building; and, (4) bonuses under Interim Controls for rapid transit proximity, multiple entrances, plazas, and side setback for 113,532 sq. ft. Total allowable building area as calculated above would be 645,917 sq. ft. (See Table 2, p. 17 for building area calculations.) The proposed project would comply with applicable height, bulk, land use, and floor area requirements, including the transfers and bonuses allowed under Interim Controls currently in effect in the C-3-O district.

The proposed project would contain 634,046 sq. ft. in retail, office and residential use. Space for mechanical equipment, parking and service areas, not counted against the code permitted gross floor area, would total 77,700 sq. ft. (two basement levels at 30,100 sq. ft. each and one full mechanical floor of 17,500 sq. ft.). The building base, including ground floor lobbies, retail space and parking and service vehicle entry, would be built out to the sidewalk with a continuous building frontage of 244 ft. on Bush St. and 170 ft. along Trinity St. (see Figure 4, p. 20). The building base would be about 30 ft. high at the corner of Bush St. and Trinity St. Office and residential space would be contained in a tower 137 by 152 ft. centered approximately on the Bush St. frontage. At its highest point, the

TABLE 2: PROJECT CHARACTERISTICS

GROSS AND NET FLOOR AREAS PROPOSED BY LEVEL (top to bottom of building)

| LEVEL (Use) | PROPOSED GROSS SQ.FT. | AREA FIGURED IN CODE GROSS SQ.FT./1/ | NET SQ. FT. |
|---|---|---|---|
| Levels 32-38 (Residential)<br>(Seven Levels = 91,350)<br>(Street Lobby = 4,311)<br>(Elevator Shaft = 6,000) | 101,661 | 101,661 | Undetermined<br>(56 units) |
| Level 31 (Mechanical) | 17,500 | | |
| Levels 1-30 (Office)<br>(29 Levels = 501,700 /3/)<br>(Terrace Level = 11,900) | 513,600 /2/ | 513,600 | 459,220 |
| Ground Level (Lobby/Retail)<br>(Lobby = 6,000)<br>(Retail = 10,580) | 18,785 | 18,785 | 9,100 |
| Sublevels (Service/Parking)<br>(2 levels at 30,100) | 60,200 | | |
| TOTALS. . . . . | 711,746 | . . . . 634,046 | |

SUMMARY

| | | | |
|---|---|---|---|
| Gross Office | = 521,805 | Net Office | = 459,220 |
| Gross Retail | = 10,580 | Net Retail | = 9,100 |

HEIGHT AND BULK MEASUREMENTS

| | Proposed | Allowable /4/ |
|---|---|---|
| Height: | 500 ft. | 500 ft. |
| Length: | 152 ft. | 170 ft. |
| Diagonal Dimension: | 170 ft. | 200 ft. |

FLOOR AREA CALCULATIONS

| Item | Floor Area | FAR |
|---|---|---|
| Basic FAR /5/ | 413,385 | 13.08:1 |
| Transfer | 119,000 | 3.76:1 |
| Bonus Space | 113,532 | 3.59:1 |
| Total Allowable | 645,917 | 20.44:1 |
| Proposed Project | 634,046 | 20.07:1 |

REQUESTED BONUS SPACE (Section 126 of the City Planning Code)

| | |
|---|---|
| Multiple Building Entrances | 20,000 sq. ft. |
| Rapid Transit Proximity | 6,500 sq. ft. |
| Plaza (west) | 30,293 sq. ft. |
| Plaza (east) | 18,095 sq. ft |
| Side setback | 38,644 sq. ft. |
| Total Bonus Floor Area | 113,532 sq. ft. |

(NOTE: Plaza areas not at least 30 ft. wide have not been included in the bonus calculations

(Please see next page for footnotes)

TABLE 2: PROJECT CHARACTERISTICS (continued)

NOTES

/1/ CODE GROSS SQ. FT. refers to Section 102.8 of the San Francisco Planning Code which describes uses in relation to calculation of allowable floor area.
/2/ Each office floor would have 200 gross sq. ft. of residential elevator shaft area within the floor's gross area of 17,500. The Terrace Level office floor would also have 200 gross sq. ft of residential elevator shaft within the floor's gross area of 12,100 sq. ft. Thus, gross office sq. ft. was calculated as 29 floors times 17,300 sq. ft. per floor and the Terrace Level was calculated as 11,900 sq. ft., according to Section 102.8 of the City Planning Code.
/3/ Excludes 6,000 gross sq. ft. of residential elevator core; this area has been added to the gross floor area of the residential space.
/4/ Section 270 of the City Planning Code.
/5/ Section 124 of the City Planning Code allows a Basic FAR of 14:1; however, since half of the development rights for Lot 26 have been used in the development of the adjacent 101 Montgomery St. building, calculated over the entire site, the present, available FAR is 13.1:1.

SOURCE: Environmental Science Associates, Inc.; Skidmore, Owings & Merrill

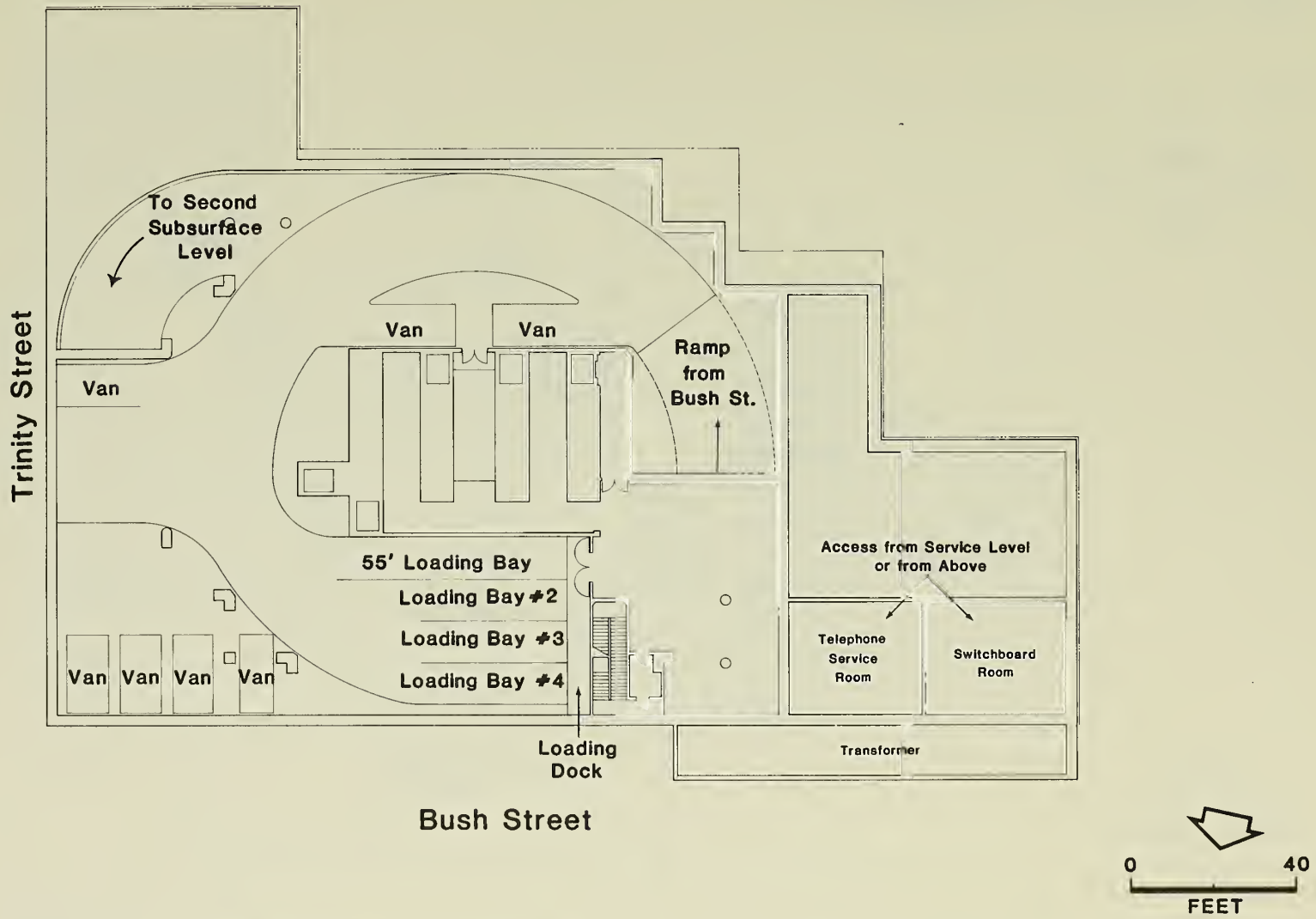
building would be 500 ft. tall; portions of the tower would terminate at lower levels (see Figures 3, 9, and 10, pp. 19, 27, and 28). The podium rooftop would provide two public plazas at the east and west sides of the project, surrounding the first office floor or Terrace Level, (see Figure 6, p. 22 for the Terrace Level plan). The Terrace Level would be reached from within the building and from two broad staircases, accessible from Bush St. to the public during business hours. The plazas would be developed for public use with landscaping, seating, evening lighting and wind protection.

There would be seven residential floors at the top of the tower containing 56 condominium units; the total residential area would be 101,661 sq. ft. (FAR of 3.2:1). The 29 office floors, together with the office space on the Terrace Level (second floor) would total about 521,805 sq. ft. (FAR of 16.5:1) The Terrace Level public plazas east and west of the tower would be about 6,600-sq.-ft. and 5,250 sq. ft., respectively. Each plaza would be accessible by broad (10 ft.) stairs from Bush St., or through the main lobby


(Refer to Figure 18, p. for the same view without photomontage.)

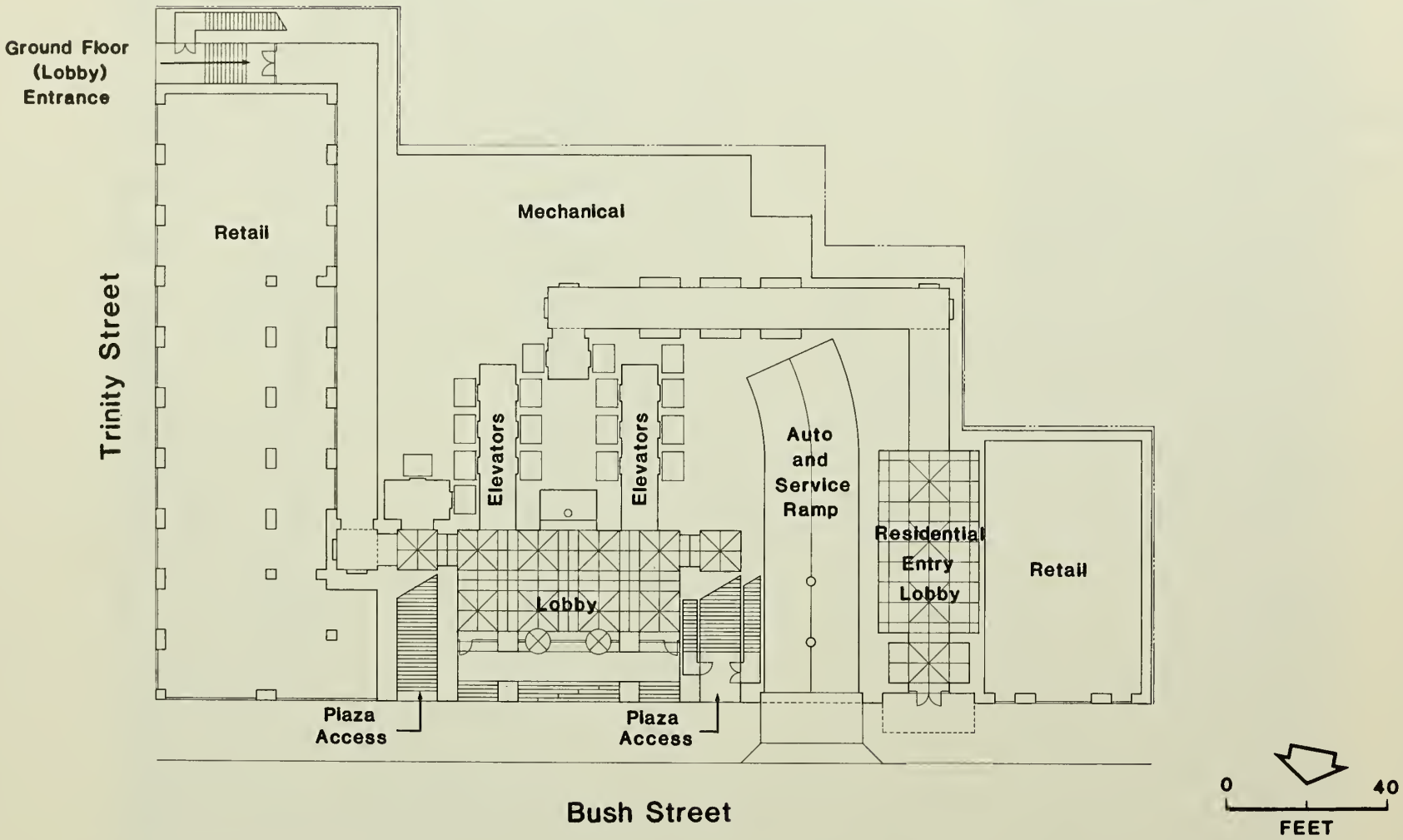
SOURCE: Skidmore, Owings and Merrill

FIGURE 3:
Photomontage of the Project
(View from Bush and Grant Sts.)



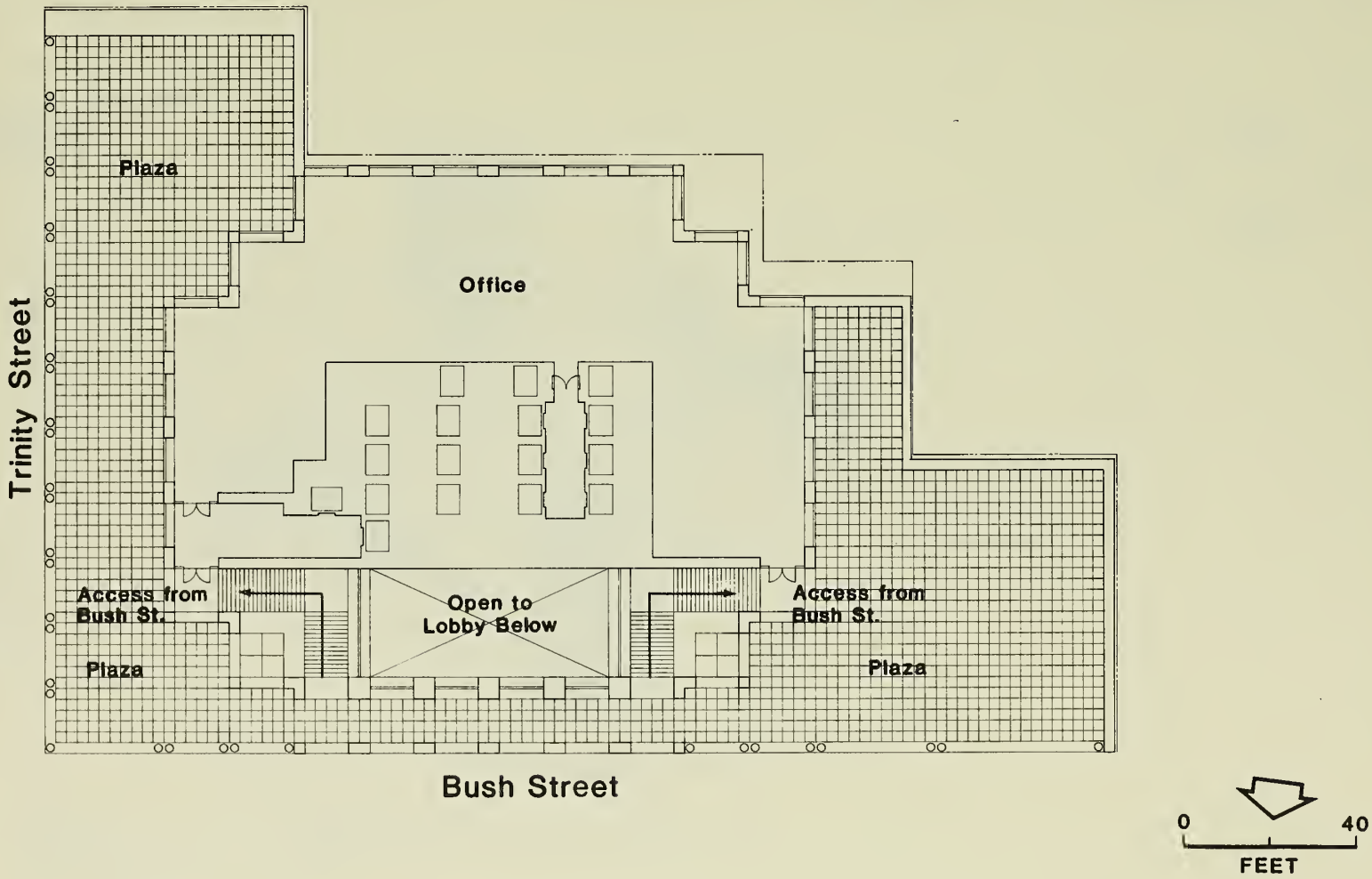

SOURCE: Skidmore , Owings & Merrill

FIGURE 4: Service Level Plan



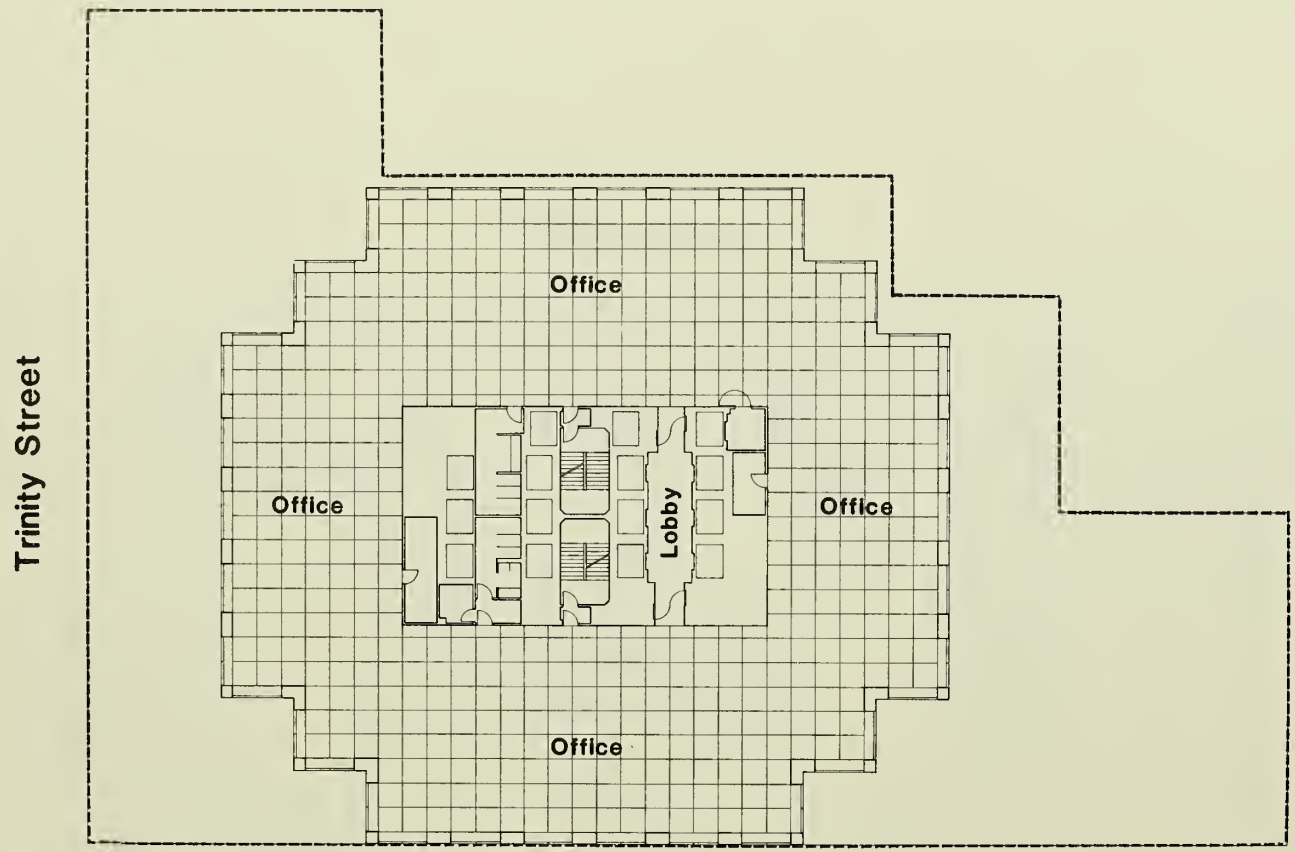

SOURCE: Skidmore, Owings & Merrill

FIGURE 5: Ground Floor Plan



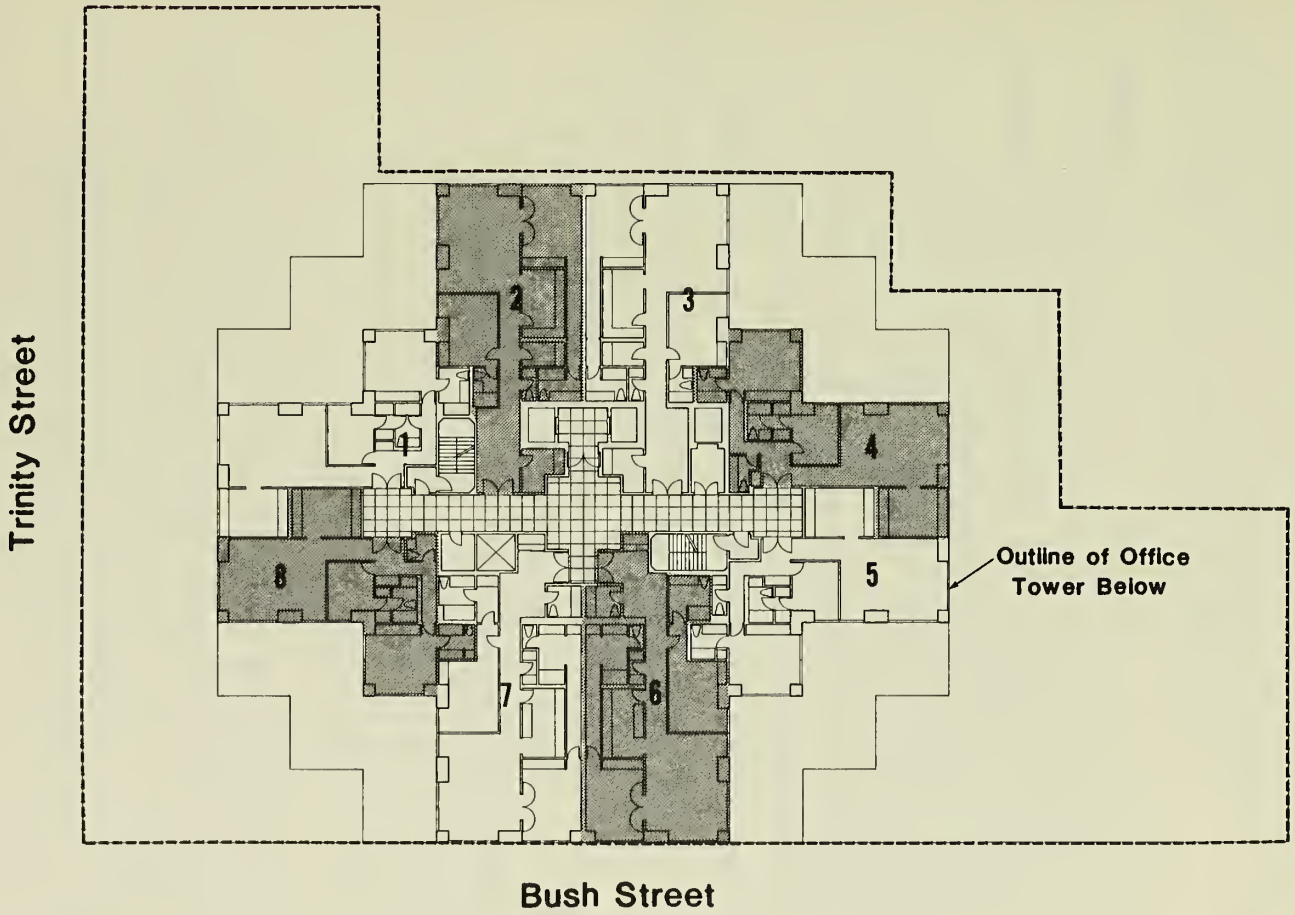

SOURCE: Skidmore, Owings & Merrill

FIGURE 6: Terrace Level Plan




SOURCE: Skidmore, Owings & Merrill

FIGURE 7: Typical Office Floor Plan




SOURCE: Skidmore, Owings & Merrill

FIGURE 8: Typical Residential Floor Plan

of the building. The street level would contain about 18,785 gross sq. ft., including a 8,205 sq. ft. lobby and 10,580 gross sq. ft. (FAR of .3:1) in retail space fronting on Bush and Trinity Sts. Two basement levels for service and parking would contain 30,100 gross sq. ft. each, a total of 60,200 sq. ft. Valet parking would accommodate about 100 parking spaces; four loading docks and six service van spaces are proposed. A full mechancial floor of 17,500 sq. ft. would separate the office floors from the residential units.

The base structure, or podium, would extend the full perimeter of the project site from the rear of the French Bank building on Sutter St. to the Hotel Stanford on Bush St. The tower would be sited to maximize its distance from existing and proposed structures while maintaining a prominent visual relationship to the important Financial District intersection of Bush and Montgomery Sts. The structural tube construction of the tower would result in regular, framed window openings. The exterior surface would be light and medium grey granites; the windows in the base structure would be clear, and those in the tower would be lightly tinted. The tower shape, as designed, would place smaller floors at the higher levels; the top of the tower would be cut-away, or configured in a manner compatible with residential unit planning (greater ratio of perimeter length to interior area than for office floors). The architects intend that the tower design result in both bulk and color variation when viewed from a distance.

## D. PROJECT OCCUPANCY

The ground floor would contain about 10,580 gross sq. ft. of retail space (about 15,900 sq. ft. of net rentable space) which is expected to accomodate about eight tenants. Commercial retail activities could include uses such as a restaurant; gift, apparel, or stationery store; advertising or travel agency; and resident-serving businesses such as a grocery or dry cleaner.

Including the Terrace Level, approximately 459,220 net sq. ft. of office space is expected to be leased to about 100 tenants. Tenants are expected to be primarily attorneys, accountants, professional business service and financial

service companies. The sponsor anticipates that most tenant firms would have a larger proportion of management and professional/technical staff than clerical staff. The project sponsor would manage and maintain the proposed building and service tenants through a permanent, full-time, on-site management team.

## E. PROJECT SCHEDULE, COST AND APPROVAL REQUIREMENTS

### PROJECT SCHEDULE

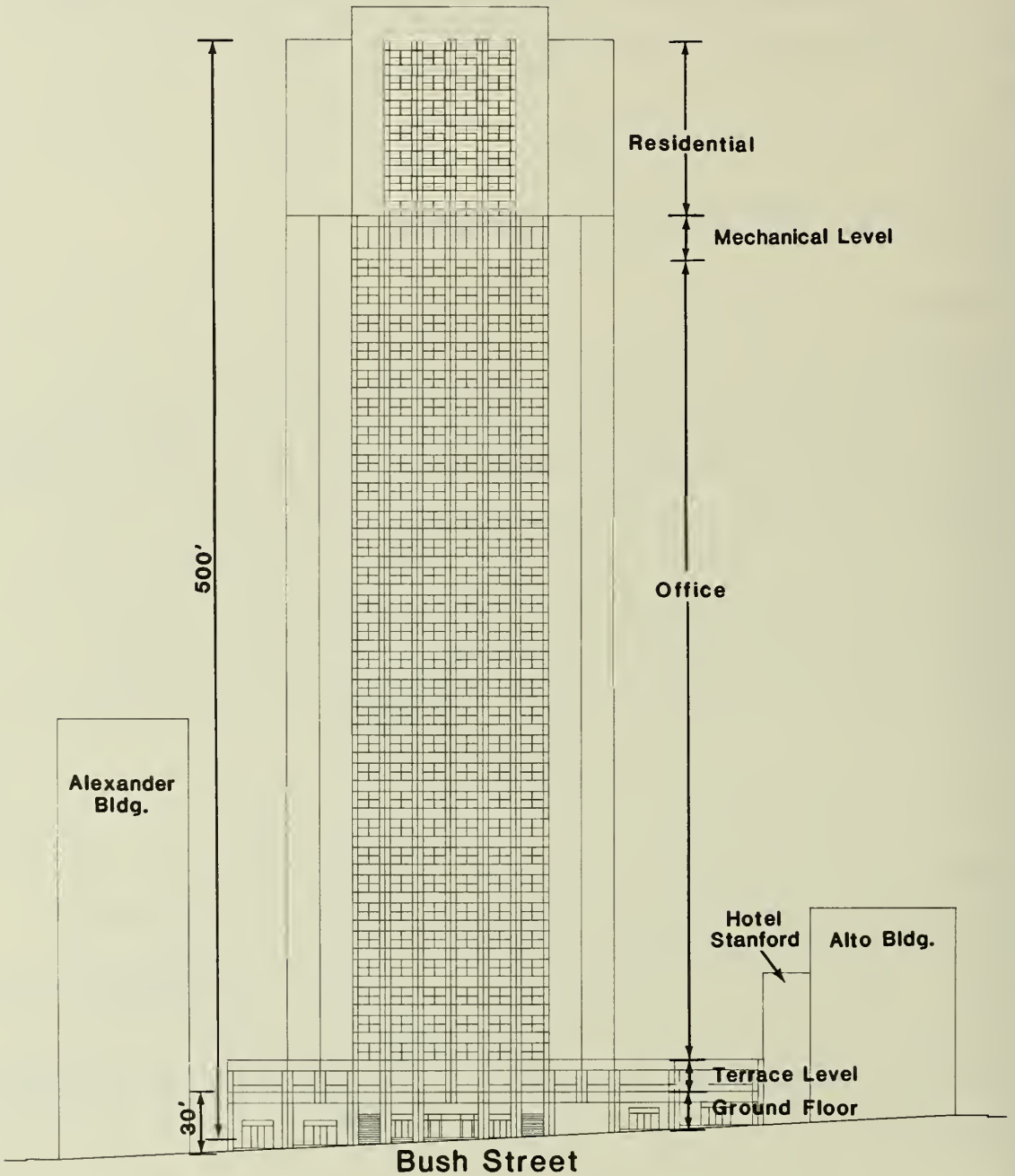
Detailed project design is scheduled for completion in late 1982 or early 1983. Demolition and site clearance are anticipated to require approximately two months; excavation and foundations about five months; steel erection seven months; because some of these periods overlap, the building shell would be completed in 12 months. Interior finishing of office and residential floors would be completed within 12 months after the completion of the building shell, a total construction period of about two years. Initial project occupancy is scheduled for early 1985, with full occupancy by late 1985./1/

### COST

The estimated construction cost of the project is $70,000,000 (1982 dollars) including demolition, excavation, building shell and interior improvements. Ground-floor retail space is expected to rent for approximately $50 per sq. ft. per year. Office space is expected to rent for approximately $36 per sq. ft. per year. (Both figures are in 1982 dollars). Residential units are expected to sell for about $300 per sq. ft., or from about $300,000 to 500,000 in 1982 dollars./2/

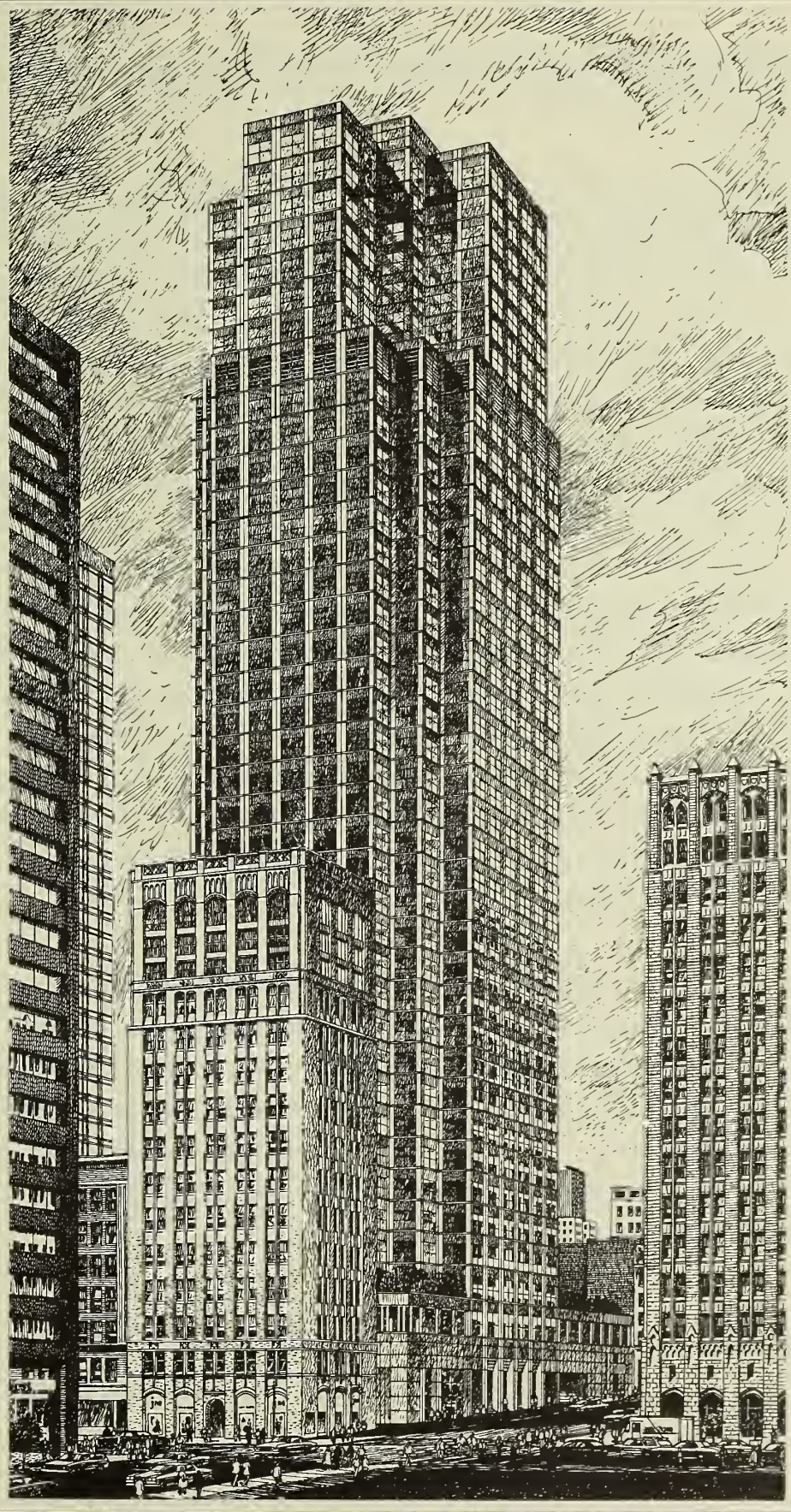
### APPROVAL REQUIREMENTS

Following a public hearing before the City Planning Commission on the Draft EIR, responses to all written and oral comments will be prepared, and the EIR will be revised as appropriate and presented to the City Planning Commission




SOURCE: Skidmore, Owings & Merrill

FIGURE 9: Bush Street Elevation




SOURCE: Skidmore, Owings and Merrill

FIGURE 10: Rendering of Proposed Project (View from Bush and Montgomery Sts.)

for certification as to accuracy and completeness. No permits may be issued until the Final EIR is certified.

Under its policy of Discretionary Review of all downtown high-rise buildings /3/ during the period of Interim Controls/4/ on the use of floor area bonuses, the City Planning Commission would review the building design and its environmental context in detail and, after a public hearing, adopt a resolution approving, approving with conditions, or disapproving the project. A Conditional Use authorization would be required by the Interim Controls, to permit the use of bonus floor area for residential use on the site. The Conditional Use authorization and Discretionary Review would be considered at the same time by the City Planning Commission, at a public hearing. The project would also require a variance from the rear yard requirement of the Planning Code, for the proposed residential levels (Section 134). This authorization would require a public hearing and approval by the Zoning Administrator. Following project approval by the City Planning Commission and the Zoning Administrator, the project sponsor must obtain demolition, building, and related permits from the Central Permit Bureau of the Department of Public Works. Under the State Subdivision Map Act and the City Subdivision Code, preparation and approval of a subdivsion map would be required for the proposed residential development.

Any use of Trinity St. or sidewalks for business-related activity and/or improvements would require an Encroachment Permit from the Department of Public Works. Any street or sidewalk improvements would also require review, public hearing and approval by the City Planning Commission as to conformity with the Comprehensive Plan. Trinity St. is designated a Pedestrian Transit Service Street in The Downtown Development Plan. The City currently has no specific improvement plans for the street.

NOTES - Project Description

/1/ Gary L. Mason, Campeau Corporation California, written communication, November 17, 1981.

/2/ Jeffery Vance, Campeau Corporation California, written communication, March 23, 1982.

/3/ Policy of Discretionary Review for projects within C-3 districts and adjacent Downtown areas was established under City Planning Commission Resolution No. 8474, January 17, 1980.

/4/ Board of Supervisors Ordinance 240-80, June 1, 1980, established the interim limitations on use of bonuses in effect until July 1, 1981. This ordinance was extended, in June 1981, until September 1, 1981 and, subsequently, until March 4, 1982. Ordinance 34-82 extends the Interim Controls until March 1, 1983.

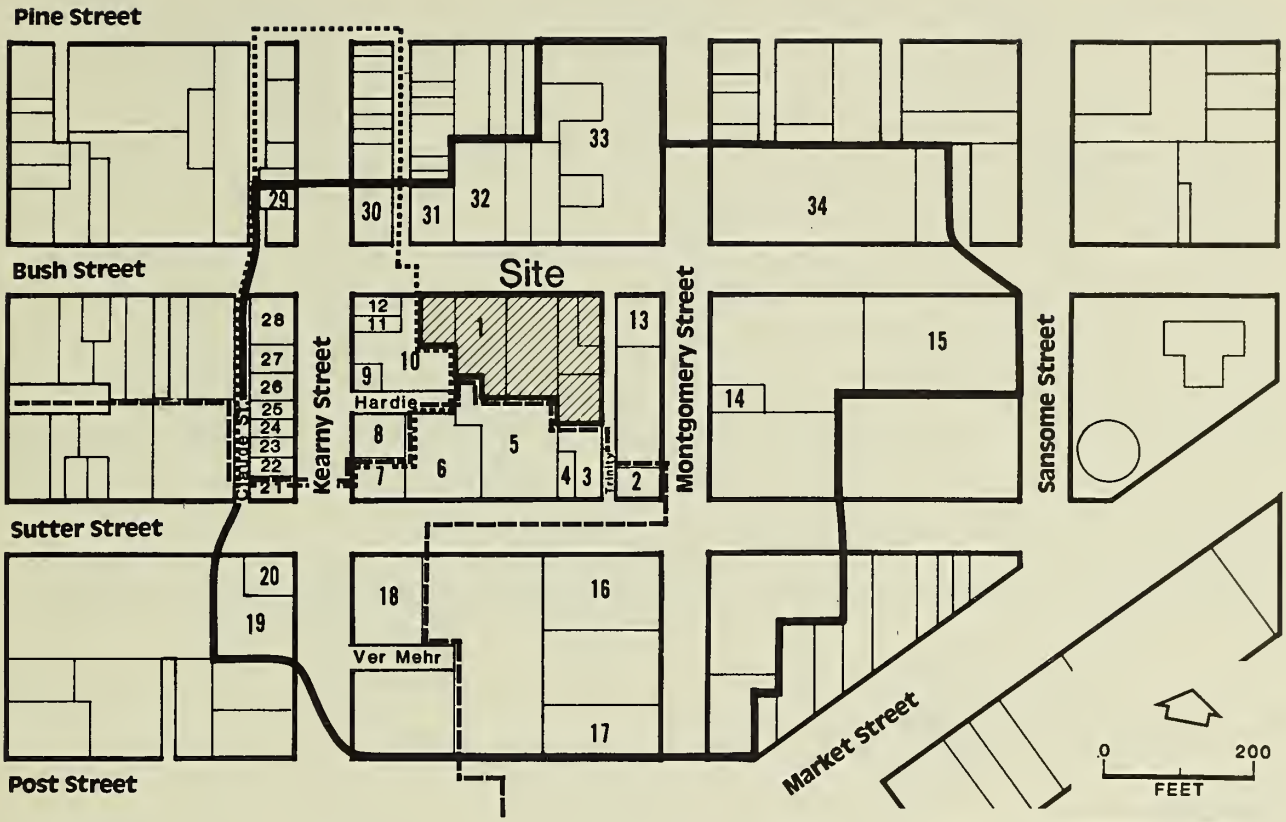
# III. ENVIRONMENTAL SETTING

## A. ARCHITECTURAL AND CULTURAL RESOURCES

The general project area is characterized by contrasting building scale and construction. Buildings west of the project block tend to be older mid-rise structures of masonry construction, while the area east of the project block is dominated by newer high-rise buildings of steel and glass.

Across Bush St. from the project site is the "A"-rated San Francisco Curb Exchange at 350 Bush St., a building with Greek and Roman motifs. The project site contains a parking garage rated "B" by the Foundation for San Francisco's Architectural Heritage Survey and "O" by the San Francisco Department of City Planning 1976 Architectural Survey. (See Appendix B, p. 221, for a discussion of ratings and surveys of historic and architecturally significant buildings.) City Planning Commission Resolution No. 8600 (May 29, 1980) establishes a list of Architecturally and/or Historically Significant Buildings in the C-3 Districts. According to stated criteria, the Financial Center Garage, 355 Bush St., should be on this list; however, by error, the Garage Annex, 351 Bush St. on the adjacent lot, is listed instead. The Financial Center Garage is a seven-story brick building constructed as an early parking garage and designed to appear as an office building (see Figure 19, p. 73).

The Sutter St. frontage of the project block is made up of a unique group of buildings of historic and architectural merit described by Heritage as "...one of the finest and most important short stretches of architecture in downtown San Francisco..."./1/ (See Figure 11, p. 32 for a list of architectural and historic resources on the project block and vicinity.) Included in the Sutter St. grouping, and abutting the project site on the south, is the Hallidie Building, rated "A" by the Heritage Survey and "5" by the Department of City Planning Survey. Kearny St. between Sutter and Bush Sts. is also




## Legend

| Building | S.F. OCP Inventory* | Heritage Survey* |
|---|---|---|
| Site: | | |
| 1 Financial Center Garage, 355 Bush | 0 | B |
| In Vicinity of Site: | | |
| 2 California Pacific Bldg., 105 Montgomery** | 2 | B |
| 3 French Bank Bldg., 108-110 Sutter** | 4 | A |
| 4 126 Sutter | N.R. | C |
| 5 Hallidie Bldg., 130-150 Sutter*** | 5 | A |
| 6 Central Realty Bldg., 154 Sutter** | 2 | B |
| 7 200 Kearny** | 3 | A |
| 8 Robins Bldg., 220-226 Kearny | 0 | C |
| 9 Marston Bldg., 240-244 Kearny** | N.R. | B |
| 10 Hotel Stanford, 246-250 Kearny | 2 | C |
| 11 260 Kearny | 0 | C |
| 12 Alto Bldg., 381-383 Bush** | 2 | B |
| 13 Alexander Bldg., 149-157 Montgomery** | 0 | B |
| 14 130 Montgomery** | 2 | B |
| 15 Standard Oil Co. Bldg., 225 Bush** | 3 | B |
| 16 Hunter-Oulin Bldg., 111 Sutter** | 5 | A |
| 17 Crocker Bank Bldg., 1 Montgomery** | 4 | A |
| 18 Sutter Hotel, 171 Sutter | 2 | C |
| 19 Bartlett Doe (Oubbs) Bldg., 153 Kearny** | 1 | B |
| 20 Eyre (Argonaut) Bldg., 161 Kearny** | 2 | B |
| 21 201 Kearny** | 2 | B |
| 22 209 Kearny | 1 | C |
| 23 215-217 Kearny | 1 | C |
| 24 219-225 Kearny | 0 | C |
| 25 227-231 Kearny | 0 | C |
| 26 237-241 Kearny | N.R. | C |
| 27 McKay Bldg., 251-255 Kearny** | N.R. | C |
| 28 Charleston Bldg., 251-155 Kearny** | 0 | B |
| 29 315 Kearny | N.R. | C |
| 30 Shasta Hotel, 380 Bush | N.R. | C |
| 31 Sam's Grill, 364 Bush | 0 | C |
| 32 S.F. Curb Exchange, 350 Bush** | 3 | A |
| 33 Russ Bldg., 235 Montgomery** | 4 | A |
| 34 Mills Bldg. and Tower, 230 Montgomery*** | 4 | A |

NOTES:
*See Appendix A for discussion of surveys and ratings
**On City's List of Architecturally or Historically Significant Buildings
***Listed in National Register of Historic Places (These are also on the above list.)

N.R. = Not Rated

SOURCE: Environmental Science Associates, Inc.

FIGURE 11:
Historic Structures on and in Vicinity of Project Site

Study Area Boundary

Potential Historic Districts*
- Retail - Shopping
- Kearny Street

* Identified in Splendid Survivors, as eligible for National Register Historic Districts

occupied by buildings of historic merit (see Figure 11, p. 32). The site is adjacent to two areas identified by Heritage as eligible for designation as National Register Historic Districts, the proposed Retail-Shopping Historic District and Kearny St. Historic District (see Figure 11, p. 32). A 19-story building planned for 222 Kearny St. would result in the demolition of a building rated C by Heritage and 1 by the Department of City Planning Survey at 220 Kearny St., and would be built over and retain two other buildings rated A and 3, and B and 2 at the Sutter/Kearny St. intersection. Other proposed buildings in the area include the Russ Tower, the San Francisco Federal Savings and Loan Headquarters (Post and Kearny Sts.), and 466 Bush St.

NOTES - Architectural and Cultural Resources

/1/ Foundation for San Francisco's Architectural Heritage, Splendid Survivors, 1979, p. 249.

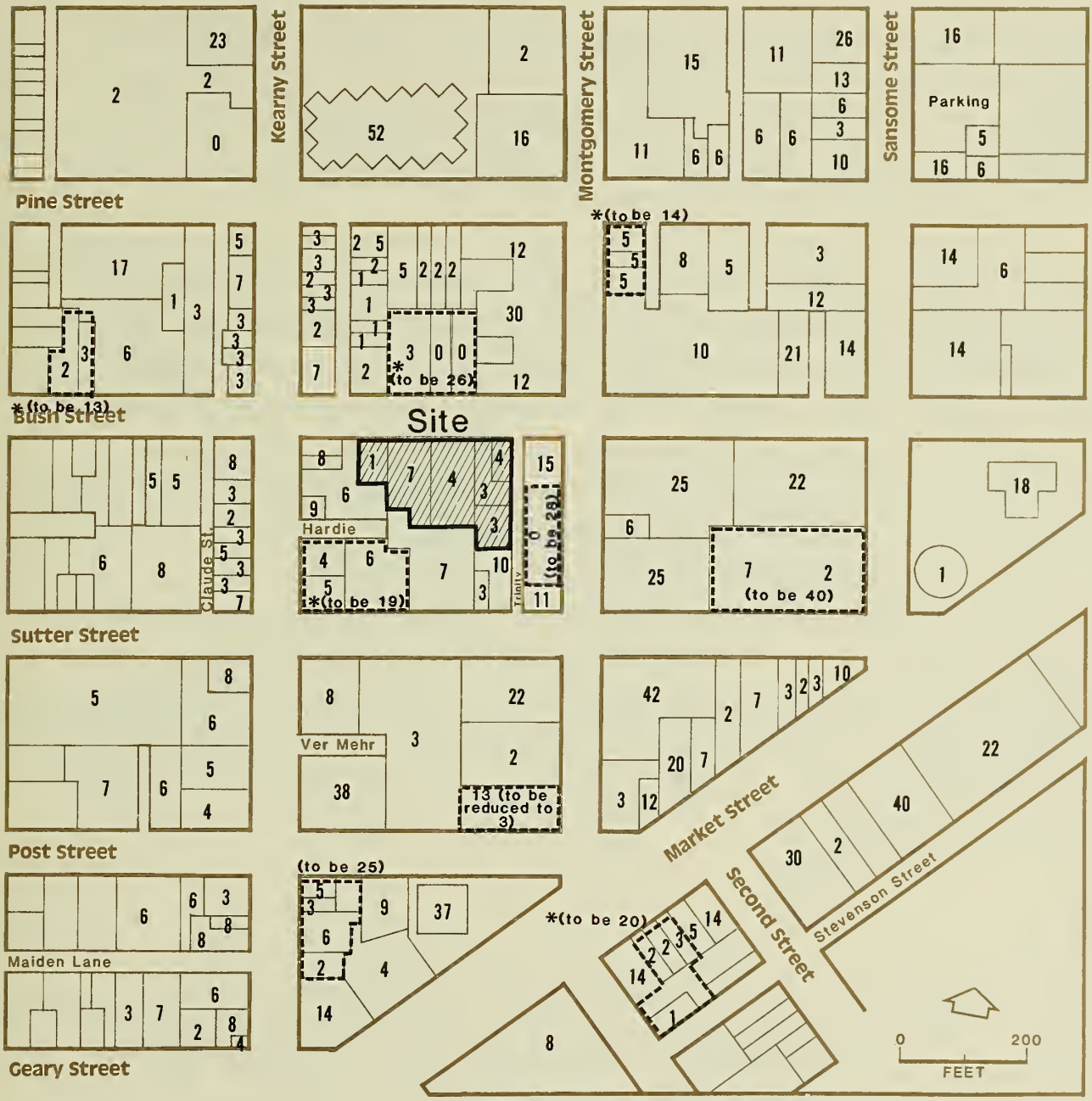
## B. LAND USE AND ZONING

### LAND USE

The project site is in the Downtown Financial District and is surrounded by office and retail uses. The most intensive Financial District development is concentrated east of the project block. The site contains six parcels totaling 31,590 sq. ft. Table 1, p. 13 shows existing uses on the site.

Ground level uses on the site include one office, three restaurants (Trinity Place, Metropol, and Salamagundi), access for the Financial Center Garage, and one vacant retail store. Upper floors on Lots 22 and 23, at the corner of Bush and Trinity Sts. contain additional offices and miscellaneous retail uses (see Appendix D, Table D-3, p. 247 for a complete list of existing uses).

The project block contains office space over retail and restaurant uses in buildings ranging from four to ten stories. Exceptions are Lot 25, adjacent to the site on the west, occupied by a six-story residential hotel above Orsi's restaurant, and Lots 20 and 21, on the site, occupied by the Financial Center Garage and Annex, respectively. Lots 2, 3, 4, 5 and 6 along Montgomery St. are the site of 101 Montgomery St., a 28-story office building now under




------ Proposed Project

* Subject to Approval

FIGURE 12:
Building Heights (in stories) in Vicinity of Project Site

SOURCE: Environmental Science Associates, Inc.

construction. The project area contains buildings ranging from two to 52 stories with most of the taller buildings located east of the project site. (An exception is the 38 story Crocker Headquarters at Kearny and Post Sts., one block south of the site.) Existing building heights on the project block and in the vicinity are shown in Figure 12, p. 34.

Across from the project site, along Bush St., are a seven-story hotel, one two-story and one three-story office building, two vacant parcels and the Russ Building, a 12- to 30-story office building. All of these structures have ground floor retail space. The three story office building directly across from the project site is the historic San Francisco Curb Exchange, a City landmark./1/ A 25-story office building has been proposed for the vacant and Curb Exchange sites. A 19-story office building that would be built above two existing structures and would involve the demolition of a third (220 Kearny St.) is proposed for the northeast corner of Sutter and Kearny Sts. (222 Kearny St.), on Lots 10, 11, and 29 of the project block. A 13-story office building proposed at 466 Bush St. would involve renovation of Fire Department Old Station No. 2, a City landmark on that site, as well as demolition of a low-rise building. Land uses in the vicinity of the site are shown in Figure 13, p. 36.

ZONING

The City Planning Code zoning classification for the site and surrounding area is C-3-O, Downtown Office District (see Figure 14, p. 37). Office and retail uses are permitted in this district with a basic Floor Area Ratio (FAR) of 14 to 1; that is, buildings may have a basic maximum floor area that is 14 times the area of the site. Section 126 of the City Planning Code contains development bonus provisions which permit additional floor area for certain design features. The Board of Supervisors has enacted an interim amendment to this Code section limiting the application of bonuses to hotels and residential uses only (Ordinance 240-80, June 1, 1980). In addition, all proposed development in the Downtown C-3 zoned districts requires Discretionary Review by the City Planning Commission (Resolution 8474, January 17, 1980) before approval of an application for a building permit.

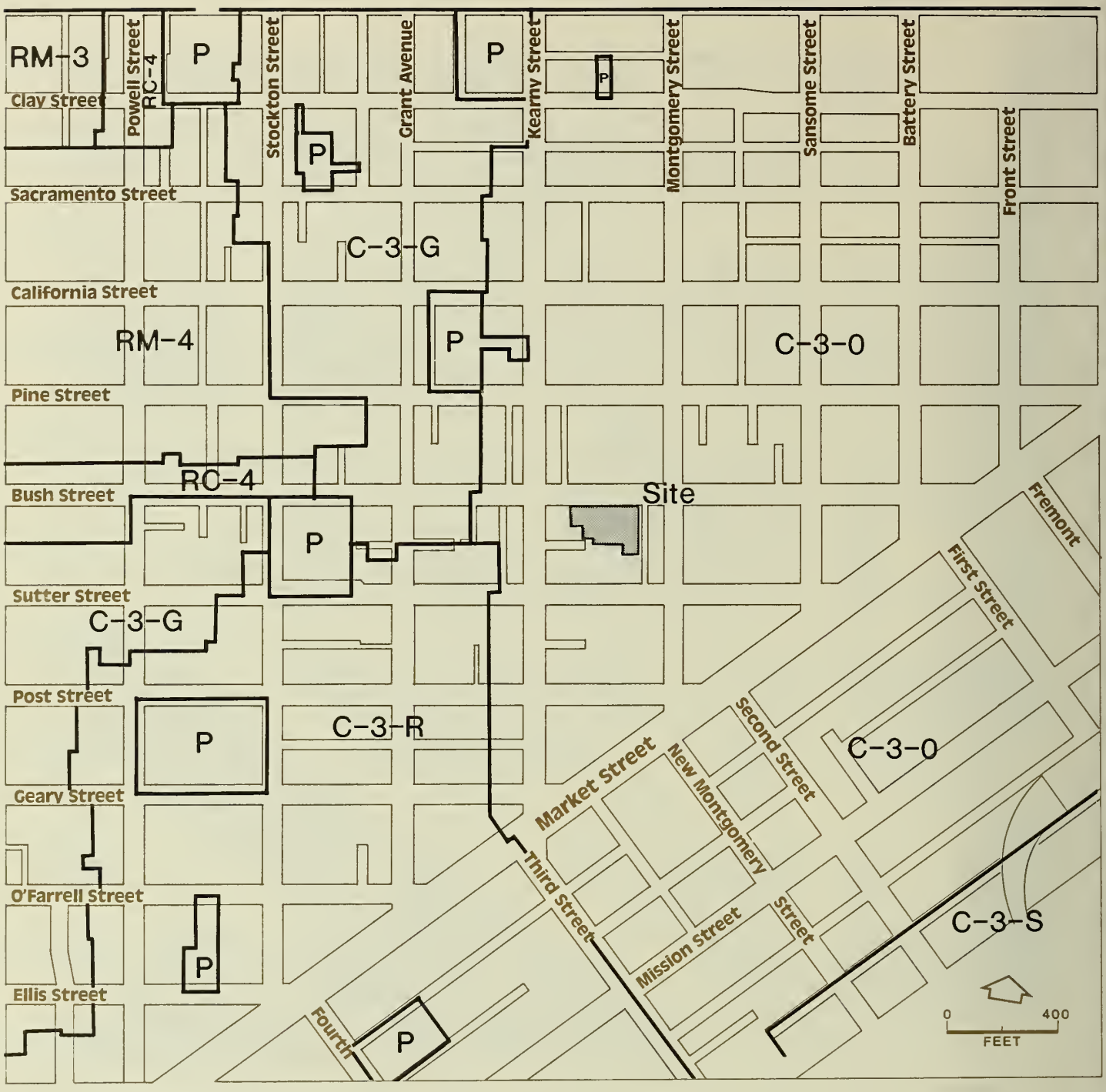

## Legend

- Office
- Hotel
- Parking Structure
- P Parking Under Building
- Pl Parking Lot
- E Restaurant
- S Shop or Other Retail
- B Branch Bank
- V Vacant
- C Under Construction

SOURCE: Environmental Science Associates, Inc.

FIGURE 13:
Land Use in Vicinity of Project Site

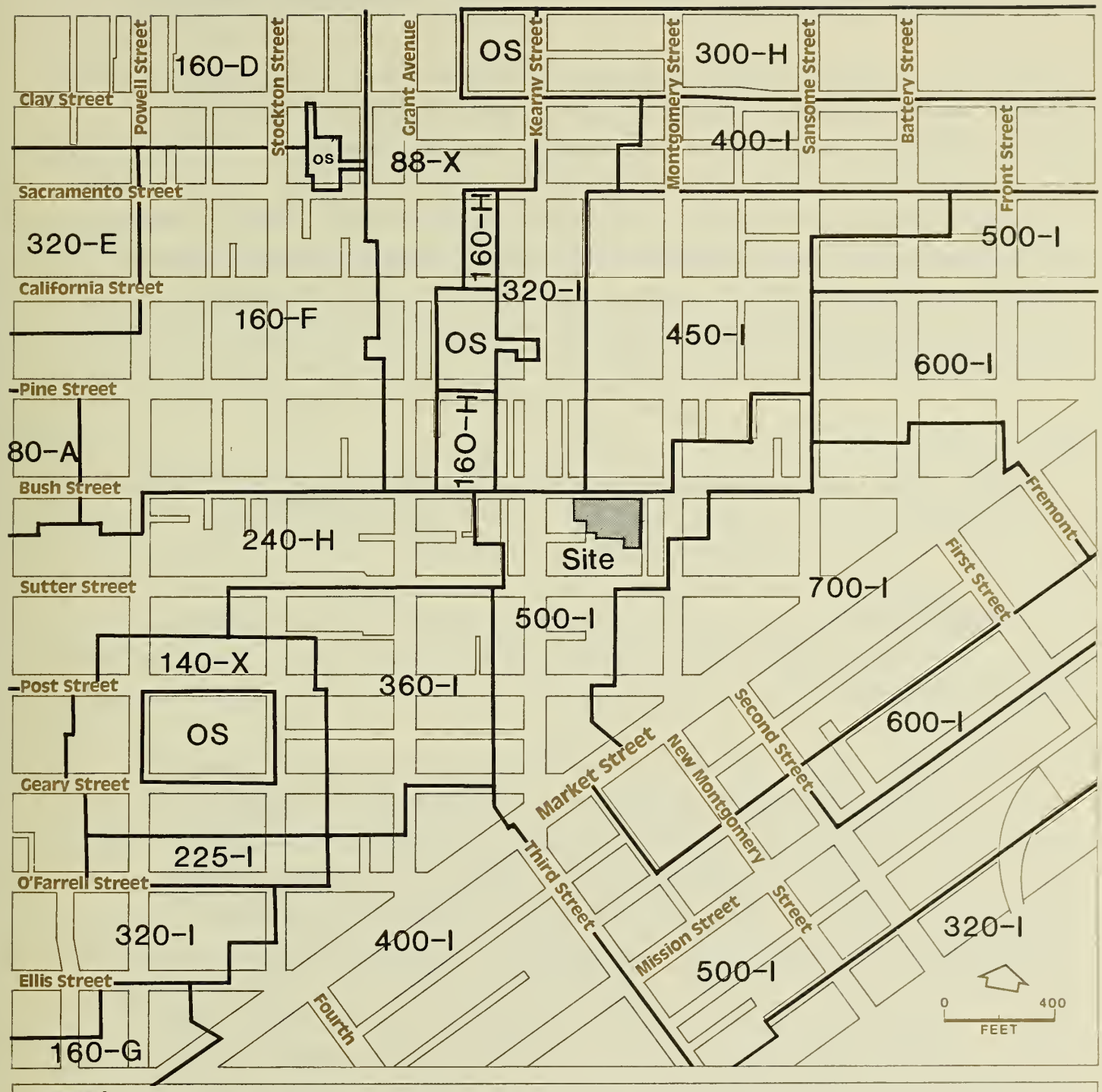
NOTE:
Letters indicate use on or below ground floor only.
Pattern indicates ground floor or upper level use.




C-3-O DOWNTOWN OFFICE DISTRICT
C-3-R DOWNTOWN RETAIL DISTRICT
C-3-G DOWNTOWN GENERAL COMMERCIAL DISTRICT
C-3-S DOWNTOWN SUPPORT DISTRICT
P PUBLIC USE DISTRICTS
RM-3 RESIDENTIAL, MIXED DISTRICTS, MEDIUM DENSITY
RM-4 RESIDENTIAL, MIXED DISTRICTS, HIGH DENSITY
RC-4 RESIDENTIAL-COMMERCIAL COMBINED DISTRICTS, HIGH DENSITY

SOURCE: San Francisco City Planning Code

FIGURE 14:
Planning Code Land Use Districts




**Legend**

| HEIGHT AND BULK DISTRICTS | HEIGHT LIMIT | HEIGHT ABOVE WHICH MAXIMUM DIMENSIONS APPLY | MAXIMUM BUILDING LENGTH | MAXIMUM DIAGONAL DIMENSIONS |
|---|---|---|---|---|
| 700-I | 700' | 150' | 170' | 200' |
| 600-I | 600' | 150' | 170' | 200' |
| 500-I | 500 | 150' | 170' | 200' |
| 450-I | 450' | 150' | 170' | 200' |
| 400-I | 400' | 150' | 170' | 200' |
| 360-I | 360' | 150' | 170' | 200' |
| 320-I | 320' | 150' | 170' | 200' |
| 225-I | 225' | 150' | 170' | 200' |
| 300-H | 300' | 100' | 170' | 200' |
| 240-H | 240' | 100' | 170' | 200' |
| 160-H | 160' | 100' | 170' | 200' |
| 160-G | 160' | 80' | 170' | 200' |
| 160-F | 160' | 80' | 110' | 140' |
| 320-E | 320' | 65' | 110' | 140' |
| 160-D | 160' | 40' | 110' | 140' |
| 80-A | 80' | 40' | 110' | 125' |
| 140-X | 140' | Bulk limits not applicable | | |
| 88-X | 88' | Bulk limits not applicable | | |
| OS | Conformity with objectives, principles and policies of the Master Plan | | | |

FIGURE 15:
Planning Code Height and Bulk Districts

SOURCE: San Francisco City Planning Code

The site is in a 500-I Height and Bulk District (see Figure 15, p. 38) which permits a maximum building height of 500 ft. and a maximum plan dimension of 170 ft. in length and 200 ft. on the diagonal above 150 feet.

Existing buildings on the project site range from two to seven stories. These buildings are generally not visible beyond the buildings and street segments immediately adjoining the site; nor is the site visible from long-range viewpoints such as Twin Peaks, Telegraph Hill and Potrero Hill due to intervening buildings.

NOTE - Land Use and Zoning

/1/Foundation for San Francisco's Architectural Heritage, Splendid Survivors, 1979, p. 121.

## C. URBAN DESIGN

### SUNLIGHT AND SHADOW

Light and shadow patterns on streets and sidewalks in the project area are cast by existing buildings on the site and by nearby high-rise structures. The buildings producing major existing shadows in the area include the Russ Building, and the 180 Montgomery St., Standard Oil Co., Wells Fargo, Hunter-Dulin, and Aetna buildings. Proposed buildings in the site area include the San Francisco Federal Savings and Loan Headquarters, Russ Tower, 222 Kearny St., and 466 Bush St. Opposite the project site, sidewalks are now shaded in winter (low sun angle), but in sunlight most of the day in summer months. On the project side of Bush St. (south side), the sidewalks west of the site have sunlight during the morning hours, except in winter; the sidewalks east of the project presently remain in shadow throughout the day in all seasons. Existing shadow patterns at different times of day and year are shown in Figures 22, 23, and 24, pp. 78-80.

## WIND

Wind conditions in San Francisco are a determinant of pedestrian comfort on sidewalks and in other public areas. Depending on wind direction, flat-walled buildings can funnel wind flows from wide, open areas between structures into narrower areas, thereby increasing wind speed. Large structures placed in the path of prevailing winds cause air pressure differences between uppper levels and the ground, and can cause increased air turbulence, and divertion of air flow (winds) downward to street level. Buildings may also block prevailing winds, creating dead air spaces immediately downwind.

West, southwest, and northwest winds are the most frequent and strongest winds during all seasons in San Francisco./1/ (In meteorology, a west wind blows from the west.) The most frequent wind direction during most months is west; in the average year, west winds blow nearly half of the time. West winds are also the strongest, averaging over seven miles per hour year round. Southwest winds are typically the second most frequent and second strongest winds, although northwest winds have had the second highest average speed during some years.

Average wind speeds are highest during the summer and lowest during the winter. However, the strongest peak winds occur during the winter, when average speeds for one hour of 27 miles per hour, or more, have been recorded. The highest average wind speeds are in the mid-afternoon, and the lowest are in the early morning. Peak winds are distributed evenly throughout the day.

Section IV, Environmental Impacts, contains a description of the present wind flow patterns surrounding the project site and compares them to estimated wind flow patterns with the proposed building. See also Appendix C: Wind Tunnel Study (pp. 224-242), especially Figures C-4, C-8 and C-12 which show existing wind directions near the project site.

Existing winds on and around the site were measured on July 28, 1982./2/ With a free stream, westerly wind of approximately 30 miles per hour (mph), winds around the site averaged between 1.75 and 7.5 mph, with gusts of up to almost

12 mph. The highest wind speeds recorded were near and across from the vacant lots at 350 Bush St., and at the northern corners of Montgomery St. at Bush St. The lowest wind speeds were recorded on Sutter St. near Kearny St.

NOTES - Urban Design

/1/ This discussion of wind speeds and directions is based on: (1) U.S. Weather Bureau data, collected at 460 California St. near Montgomery St., about two blocks north of the site, and (2) Bay Area Air Quality Management District data, collected at 939 Ellis St. near Van Ness Ave., about 1.1 miles southwest of the site.

/2/ Bruce White, Ph. D., letter report dated August 1, 1982, to Richard Grassetti, Environmental Science Associates, Inc. confirming results of on-site wind measurements conducted on July 29, 1982. A complete description of these tests and their results is on file at the Office of Environmental Review, 450 McAllister St. San Francisco, Fifth Floor.

## D. EMPLOYMENT, HOUSING AND FISCAL FACTORS

### EMPLOYMENT

#### Local and Regional Commercial Space and Employment

San Francisco is the major office center in the Bay Area, with approximately 57.3 million gross sq. ft. of office space./1/ During the 1970's, space in downtown office buildings was added at a rate of about 1.7 million gross sq. ft. per year; approximately 32.4 million gross sq. ft. of office space was constructed between 1960 and 1981 (see Appendix D, Table D-1, p. 244-245). An additional 7.7 million gross sq. ft. of office space will be added when the buildings under construction (as of August 1982) are finished, and another 5.4 million sq. ft. of office space has been approved but is not yet under construction (as of August 1982).

The largest employment growth in the Bay Area from 1970 to 1978 occurred in the office sector, with over 60% of the regional increase in total work force. In 1978, a total of 1.2 million people held office jobs in the Bay Area, with nearly 70% employed by firms that in some way serve the local populations. Of the 280,000 office workers employed in San Francisco, over

55% worked for employers such as national or regional headquarters which serve not only the local population but a wider geographical area as well./2/

## Vacancy Rates

According to a 1982 Coldwell Banker survey of 92 buildings (new, existing, and major renovations), the vacancy rate in downtown San Francisco office buildings was 3.4% between March 31, 1982 and June 30, 1982 /3/, a 3.3% increase from 0.1% during the same period in 1981. The current 3.4% vacancy rate is the fourth lowest rate in the nation among major downtown financial districts, and is lower than the national average of 7.0%./3/ For comparison, the June 30, 1982 vacancy rate is 6.4% for Chicago; 2.6% for midtown Manhattan; and 2.3% for Houston.

Based on a 1981 survey of about 290 buildings, the San Francisco Building Owners and Managers Association (BOMA) reported a citywide vacancy rate of 1.04% for office space./4/ These low vacancy rates (rates of less than 5% are considered low) indicate a continuing demand for office space in San Francisco. The increase in the downtown vacancy rate from March 1981 to mid- 1982 may be attributable to several factors. One effect of the apparent shortage of office space in San Francisco has been stimulated office development and increased demand for existing office space elsewhere in the Bay Area. The City of Oakland and San Mateo and Contra Costa Counties, in particular, are experiencing increased demand from businesses relocating from San Francisco. For example, approximately 5.0 million sq. ft. of office space in nine new buildings are currently proposed for the City of Oakland./5/ Some businesses move their clerical, support, and non-corporate functions to outlying areas while maintaining headquarters and main branch offices in San Francisco.

## Commercial Rents

Rents for commercial office space in the downtown Financial District have increased dramatically, almost tripling in the last decade (from $8.50 per sq. ft. in 1970 to $23 per sq. ft. in 1980)./6/ High quality, new space leases for $25 to $35 per sq. ft. annually; these rates are expected to increase to between $40 and $50 per sq. ft. in 1983./6/ Rents in older

buildings in the Financial District are less expensive, averaging between $10 and $15 per sq. ft. Existing, converted and rehabilitated commercial office space located South of Market rents for between $12 and $15 per sq. ft.; new South-of-Market office space is expected to rent for about $23 per sq. ft./7/

San Francisco rents are about 35% higher than commercial rents in Oakland ($17 to $20 per sq. ft.); the Peninsula ($18 to $22 per sq. ft.) and Contra Costa County ($18 to $20 per sq. ft.)./7,8/

Employment and Tenant Mix at the Project Site

Businesses at the project site employ approximately 138 persons. Tenants in the six buildings include eight offices associated with financial, real estate and legal services, three restaurants, a hair salon, a vacant store and a parking garage (see Appendix D, Table D-3, p. 247).

HOUSING

Regional and Local Housing Characteristics

A description of housing characteristics in the region and San Francisco is included in EE.80.268, Five Fremont Center, Final EIR, certified March 12, 1981, pp. 37-49, hereby incorporated by reference persuant to California Environmental Quality Act (CEQA) guidelines, California Administrative Code, Title 14, Section 15140./9/ In summary, information on the housing stock includes amount, growth factors, vacancy rates and purchase and rental costs. Both regional and San Francisco housing stock are characterized by low growth rates, low vacancy rates, and high rental and purchase costs in relation to typical wages paid. This combination of factors has tended to constrict the supply and affordability of housing in San Francisco. Since publication of the Five Fremont Center FEIR, this information has been partially updated, based upon recently available information from the 1980 U.S. Census. According to 1980 Census data for San Francisco, the vacancy rate for owner-occupied housing was 1.0% and the vacancy rate for rental units was 4.2%. The rental vacancy rate is 2.68% of the total housing stock./10/ The median value of noncondominium owner-occupied units was $104,600 and the

median rent was $267 in 1980./10/ Inflating these figures based on the 16.7% increase in the Consumer Price Index between April 1980, the date of the Census, and March 1982, would yield median home value and rent of $122,100 and $310, respectively. Rental price increases may have been moderated by the Rent Stabilization Ordinance which limits rent increases on most units to seven percent per year.

FISCAL FACTORS

The assessed value of the properties on the project site in fiscal year 1981-82 is $4,790,000. At the 1981-82 property tax rate of $1.19 per $100 assessed valuation, the properties are expected to yield about $57,000 in property tax revenues in the 1981-82 fiscal year, distributed as shown in Table 3.

General Fund revenues to the City and County of San Francisco from the non-BART sales tax, payroll tax, gross receipts tax, and non-bond property tax totaled about $131,000 from the site in 1981./11/

TABLE 3: DISTRIBUTION OF PROPERTY TAX REVENUES FROM PROJECT SITE IN 1981-82

| Agency | Ad Valorem Tax Rate | Percent | Revenues* |
|---|---|---|---|
| City and County of S.F. | $0.945 | 79.4 | $45,300 |
| S.F. School District | 0.167 | 14.1 | 8,000 |
| Bay Area Air Quality Management District | 0.002 | 0.2 | 100 |
| BART | 0.076 | 6.4 | 3,600 |
| TOTAL | $ 1.19 | 100 | $57,000 |

* Based on an assessed valuation of $4,790,000.

SOURCES: San Francisco Controller's Office; Environmental Science Associates, Inc.

Costs to the City

The City incurs costs in serving the existing buildings. Police, fire, and general government expenditures are supported primarily by the General Fund. Most street maintenance, street improvement, and traffic control costs are supported by other revenue sources such as fees, fines, and federal and state aid.

NOTES - Employment, Housing, and Fiscal Factors

/1/ San Francisco Department of City Planning, November 1981, a table on "Major Office Building Construction and Conversion in San Francisco".

/2/ Association of Bay Area Governments (ABAG) and Bay Area Council, December 1979, San Francisco Bay Area Economic Profile.

/3/ Coldwell Banker, "Office Vacancy Index of the United States," June 30, 1982. San Francisco vacancy rates are part of a national survey of 22 major downtown districts conducted quarterly. A copy of the June 30, 1982 survey is on file and available for review at the Office of Environmental Review, 450 McAllister St., 5th Floor.

/4/ Elmer Johnson, Director, Building Owners and Managers Association, (BOMA) telephone communication, May 6, 1982.

/5/ City of Oakland, Department of City Planning; "Major Building in the Central District," January 25, 1982.

/6/ Department of City Planning Memorandum to the City Planning Commission, "South of Market Interim Controls," January 26, 1982.

/7/ Derek Morris, Leasing Agent, Cushman and Wakefield, telephone communication, May 7, 1982; Valerie Miles, Senior Broker, Coldwell Banker-Oakland Office, telephone communication, April 23, 1982; and Jeffery Nebel, Leasing Agent, Coldwell Banker, telephone communication, April 30, 1982.

/8/ Assuming that demand remains relatively constant, rents in outlying areas are expected to increase substantially in 1983 and 1984 for new, high quality space. One reason for the comparatively low rents in outlying areas is that the available space is not competitive, high quality (headquarter-type) space. For example, new buildings in Oakland are expected to lease for $24 per sq ft. in 1983, which would be comparable to rent for new buildings in the South of Market area.

/9/ Five Fremont Center, Final EIR (EE.80.268, Certification Date March 12, 1981, pp. 37-44). This report is available for review at the Office of Environmental Review, 450 McAllister St., 5th floor.

/10/ City Planning and Information Services, "1980 Census Information," March 1982.

/11/ See p. 95 for a breakdown of these General Fund revenues.

## E. TRANSPORTATION, CIRCULATION AND PARKING

### STREET SYSTEM

The site is served by local streets and by portions of the regional freeway system (see Figure 1, p. 14). Access to the freeways connecting the downtown area with the East Bay, San Francisco Airport and the Peninsula is provided by pairs of ramps about one-half mile to the northeast (Clay-Washington), about one-half mile to the southwest (Main-Beale) and about one-mile to the south (Harrison and Bryant). The Southern Junipero Serra Freeway (Interstate 280) is also accessible from ramps at Sixth and Brannan Sts. and an unpaired off-ramp at Fourth and Berry Sts., both are about one and one-quarter mile south of the site.

The site is within the Downtown Core automobile control area designated in the Downtown Transportation Plan of the Transportation Element of the San Francisco Comprehensive Plan. This area is described as: "an intensely populated area which functions as a financial, administrative, shopping and entertainment center where priority must be given to the efficient and pleasant movement of business clients, shoppers and visitors. A continuing effort should be made to improve pedestrian, transit and service vehicle access and circulation, and these functions must have priority for the use of limited street and parking space (within this core)"./1/ The Plan calls for reducing the impact of private commuter vehicles and excess automobile traffic in the Downtown core.

The project site fronts on a local street (Bush St.) and an alley (Trinity St.). Market, Mission, Post, Kearny, Montgomery and

New Montgomery Sts. are designated as transit arterial streets ("route of major arterial transit lines") in the Downtown Transportation Plan./2/ Bush St. is designated a primary vehicle street ("streets functioning as major routes for automobile and truck movements into and out of the downtown area, chiefly to and from the parking belts for automobiles" /2/). Because of the one-way eastbound designation, Bush St. serves traffic inbound into the downtown area. Pine St. is the designated westbound primary vehicular street that serves outbound traffic.

Market, Kearny, and Montgomery Sts. are designated as major thoroughfares, which the Comprehensive Plan defines as "crosstown thoroughfares whose primary function is to link districts within the City and to distribute traffic to and from the freeways" (p. 19). Market, Mission, Kearny, Post, Sutter and Montgomery Sts. are designated transit preferential streets, where priority is given to transit vehicles over autos. During the morning peak period, Post St. between Taylor and Market Sts. has an exclusive transit lane (a "diamond lane").

Bush, Sutter, Kearny and Montgomery Sts. are one-way streets, carrying Muni electric trolley coach and motor coach lines. Bush St. is one-way eastbound with four lanes between 7:00 - 9:00 a.m. and 4:00 - 6:00 p.m. and three lanes otherwise. Sutter St. is one-way westbound and carries four lanes of traffic between 4:00 and 6:00 p.m. weekdays, and two lanes during all other hours. Kearny St. is one-way northbound, carrying five lanes of traffic during the morning and evening peak periods and four lanes at other times. Montgomery St. is a one-way three-lane street, carrying traffic southbound, with two additional lanes during peak hours.

The intersections of Bush and Kearny, Bush and Montgomery, Sutter and Kearny, and Sutter and Montgomery Sts. are controlled by traffic signals operating on a pre-timed basis, with green time allocations in proportion to peak and off-peak traffic volumes in the applicable directions. The intersections on Montgomery St. in the project area have a pedestrian-only signal phase during which no vehicles are allowed through the intersection (this type of installation is called a "scramble system").

TRANSIT SERVICE

The project site is served by Muni electric trolley and motor coach lines providing radial service to and from the downtown area, and by light rail vehicle lines accessible at the Montgomery Station of the Market St. subway. Muni routes in the project vicinity are shown in Figure 16, p. 49. Of the 53 Muni lines serving the Downtown San Francisco area, over 40 operate within a walking distance (2,000 ft.) of the site. Of these, 15 stop within a one block radius of the site. Table E-5, p. 263, of Appendix E shows the existing p.m. peak hour conditions on the Muni and other transit carriers.

Regional service is provided to and from the East Bay by the Bay Area Rapid Transit District (BART) at the Montgomery Station, and by A-C Transit motor coaches at the Transbay Transit Terminal located on Mission St. at First St., 1500 ft. east of the project site.

Service to the southern Peninsula is provided jointly by CalTrans and the Southern Pacific Transportation Company (SP) from the train terminal at Fourth and Townsend Sts.; by the San Mateo County Transit District (SamTrans) with bus routes and stops along various streets in the area, primarily on Mission St. west of First St.; and by BART, which provides transfers to SamTrans routes at the Daly City BART Station.

The Golden Gate Bridge Highway and Transportation District (Golden Gate Transit) provides peak-period bus service to Marin and Sonoma Counties from stops along Howard St., at the Transbay Transit Terminal at Mission and Fremont Sts., and along Sansome St. Boarding stops near the project site are located approximately four blocks northeast on Sansome St. at Sacramento St. and on Pine St. at Battery St. Discharge stops are located along Folsom St., at the Transbay Transit Terminal, and at stops along Battery St. Discharge stops near the project site are located approximately five blocks away on Battery St. at California St, to the northeast, and at the Transbay Terminal to the southeast. Golden Gate Transit provides ferry service to terminals in Larkspur and Sausalito from the Ferry Building. In addition, independently owned and operated jitneys operate along the length of Mission St. during peak hours.


## Legend

- BART and Muni Metro Station
- BART Route
- Muni Metro Subway
- Muni Surface Route
- Cable Car Route
- 1,2,3,4 Route Designation
- Transit Stop

SOURCE: San Francisco City Planning Code and San Francisco Municipal Railway

FIGURE 16:
Muni and BART Routes in Vicinity of Project Site

Golden Gate Transit also operates a van pooling program to North Bay areas not served by existing motor coach routes. The RIDES car pooling program, operating as a nonprofit, publicly funded corporation, provides consulting and matching services to help establish Bay Area van pools.

PEDESTRIAN MOVEMENTS

Figure 25, p. 111 shows existing 15-minute p.m. peak pedestrian activity expressed as a percentage of capacity of the sidewalk and crosswalk system surrounding the project site. The crosswalks at Montgomery St. intersections with Bush and Sutter Sts. are controlled by a special signal system, a "scramble system", that provides a pedestrian-only period for the whole intersection during which diagonal crossings can be made. The rationale for this type of operation is to separate the pedestrian and vehicular traffic streams to allow better operation of the intersection for both pedestrians and vehicles, at intersections with high pedestrian and vehicle flows. Vehicular traffic flow through the intersection is improved by removing turning conflicts with crossing pedestrians by vehicle-only portions of the signal cycle. In practice, the vehicle-only portions of the signal cycle are not observed; pedestrians currently cross the intersection in violation of the vehicle-only signal.

The Montgomery St. sidewalk, between Bush and Sutter Sts., is presently blocked by construction for the 101 Montgomery St. building. The values reported in Figure 25, p. 111, are for pre-construction conditions. Sidewalk widths on Bush St. are restricted by street trees in planters, parking meters and newspaper racks, making an effective width of 10.0 ft. (This is approximately 65% of the full building-to-curb width of 15.5 ft.) After completion of the 101 Montgomery St. building the Montgomery St. sidewalk widths will be 12 ft.; reductions in width from street furniture or landscaping are not known at this time./3/

Pedestrian activity around the site during the peak periods of 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. is directed primarily to and from transit and parking facilities. Peak afternoon pedestrian flows are generally more intense than those of the morning period. Noon hour flows are generally

equivalent to or more intense than the afternoon flows, and are directed primarily to restaurants and retail stores within the downtown area.

The Financial Center Garage, located mid-block on the Bush St. frontage of the project site, operates between 6:00 a.m. and 11:00 p.m. Vehicles crossing the sidewalk to enter or leave the garage interfere with pedestrians on the sidewalk. Analysis of use of the garage indicates that peak arrivals and departures occur during the morning and afternoon peak periods, respectively. During peak arrival times queued vehicles block the sidewalk for brief periods (less than 1% of the time).

TRAFFIC

A capacity analysis of the four intersections adjoining the project block indicates that those at Montgomery and Sutter, Bush and Kearny, and Kearny and Sutter Sts. are operating at vehicular Level of Service C or better during the p.m. peak hour, and that the intersection at Bush and Montgomery Sts. operates at vehicular Level of Service D during the p.m. peak hour. (See Table E-6, p. 264, in Appendix E, for definitions and volume/capacity ratios for each vehicular Level of Service, and Table 11, p. 115, for the peak hour volume-to-capacity ratios). Two of the three intersections at the freeway ramps (the intersections of Mission and Beale, and Mission and Main Sts.) operate at Level of Service D during the p.m. peak hour. The intersection of Fourth and Harrison operates at Level of Service C during the p.m. peak hour.

Pedestrian flows in crosswalks have the effect of reducing lane capacity at signalized intersections. Table E-7, p. 265, in Appendix E shows the effect on the carrying capacity of the street system; capacity reductions are the direct result of delay to turning vehicles. In the project vicinity, pedestrians crossing the intersections on Montgomery St. account for an approximate reduction of 60% in intersection capacity and an approximate reduction of 15% at the Kearny-Bush St. intersection.

Analysis of the Financial Center Garage located on the site indicates the facility generates approximately 1,280 vehicle trip ends per day with p.m. peak volumes of approximately 200 vehicles per hour. Peak arrivals are

between 8:00 to 9:00 a.m.; peak departures are between 5:00 and 6:00 p.m./4/ Sufficiently large gaps in the pedestrian stream and traffic stream exist to allow vehicles to enter and exit the garage without undue delay. As the garage uses valet parking, queues in the enterance area to the garage occasionally (less than 1%of the time) develop during peak arrival times.

PARKING

A survey of existing long-term (greater than six hours) off-street parking available to the public within walking distance (2,000 ft.) of the project site was conducted (see Figure 17, p. 53)./5/ In this area there are a total of about 18,160 long-term, commercially available off-street spaces, of which 1280 were vacant on a daily basis at the time the survey was conducted, or an average occupancy of about 93%. Of these 18,160 spaces, 870 are located on five lots that are proposed for future office development, including the project site. Fifteen lots, containing 1,250 temporary spaces, are on sites within the Yerba Buena Redevelopment Area, which is scheduled for full completion in 1988. None of the spaces surveyed within 500 ft. of the site were vacant; about 70% of the vacant spaces were more than 1,000 ft. from the project site.

The Financial Center Garage on the site operates as a valet parking facility providing 150 monthly reserved spaces and 210 unreserved spaces available for short-term or all-day parking, or 360 total spaces. The unreserved spaces are used for both short-term and all day parking. Analysis of weekly receipts from the garage shows the unreserved spaces to fill by approximately noon and remain full until 4:00 p.m. (approximately 40 spaces per hour empty and are refilled during this time period).

There are 11, 30-minute metered parking spaces on the Bush St. block adjacent to the project which are restricted to commercial use (truck loading and unloading) between 9:00 a.m. and 1:00 p.m. The Montgomery St. curb on the project block is a commercial loading zone along its entire length, with no marked spaces; tow-away zones are in effect from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. on both Bush St. between Kearny and Montgomery Sts. and


SOURCE: TJKM Transportation Consultants

FIGURE 17: Parking Survey Study Area

on Montgomery St. on the project block. Trinity St., the alley between Bush and Sutter Sts. adjacent to the project site, is posted "no parking at any time."

Observation of the Bush St. frontage during one daytime hour indicates about 80% occupancy of the metered spaces there, with a low turnover (30%). Approximately 70% of the vehicles remained in the spaces longer than the 30-minute metered time limit, with an average stay of 50 minutes per vehicle./6/

NOTES - Transportation, Circulation and Parking

/1/ San Francisco City Planning Commission, Resolution 7647, January 20, 1977, Revisions to the Transportation Element of the Master Plan Regarding Parking, p. 5. Downtown Transportation Plan, Objective 1, Policy 10.

/2/ San Francisco City Planning Commission, Resolution 6834, 27 April, 1972, Comprehensive Plan, Transportation Element, pp. 24-25.

/3/ As confirmed by Peter Cahill, Cahill Construction Co., telephone communication, August 4, 1982.

/4/ Financial Center Garage information obtained from daily transaction records supplied by Mrs. Daisy Jerome, owner, at a meeting on November 25, 1981.

/5/ The parking inventory survey was conducted on November 5, 6, 7, 10, 13,and 17, 1980, and January 20-23 and 26, 1981 (all weekdays) between the hours of 10:00 a.m. to noon and 1:00 to 3:00 p.m. The study area is bounded by Howard, Fourth, Ellis, Powell, Geary, Mason, Sacramento, Powell, Clay, Stockton, Washington, Grant, Jackson, Sansome, Washington, Davis, California, Drumm, Market, Beale, Mission, and Fremont Sts. The study was conducted after the start of excavation for the George R. Moscone Convention Center (August 10, 1978) and construction for Crocker Plaza and the associated respective loss of all parking spaces in the Third-Fourth-Howard-Folsom Sts. block and some in the block to its north, and the loss of parking in the Montgomery-Post-Kearny-Sutter Sts. block. The information was updated and revised in July and August 1982 by Environmental Science Associates, Inc..

/6/ The on-street parking observation was conducted on November 30, 1981 (Monday) during a single hour between 1:00 - 2:00 p.m. by TJKM.

## F. AIR QUALITY

The nine-County San Francisco Bay air basin is designated by the California Air Resources Board (CARB) as a nonattainment area for the ozone ($O_3$, or

photochemical oxidant) and carbon monoxide (CO) standards. San Francisco is not a nonattainment area for total suspended particulate (TSP); San Francisco does not violate federal standards for nitrous oxides (NOx) but occasionally violates the stricter State standard. Nonattainment means that the federal ambient air quality standards for these pollutants have been violated within the past two to three years. As required by the federal Clean Air Act, as amended in 1977, a regional Air Quality Plan/1/ has been adopted which establishes control strategies (stationary and mobile source emission controls and transportation improvements) to attain the standards for these pollutants by 1987. The Bay Area Air Quality Management District (BAAQMD), Metropolitan Transportation Commission (MTC), and CARB have primary responsibility for implementation of these strategies.

Ozone is not directly emitted but is a secondary pollutant formed in the atmosphere by a complex series of photochemical reactions and takes about one to three hours to accumulate. Ozone air pollution is a regional phenomenon because the precursor pollutants are carried downwind, usually to the East and South Bay, during the reaction process. In contrast, CO and TSP concentrations reflect local emission sources; concentrations are highest at the source and decrease as the pollutants are dispersed by wind.

San Francisco's air quality, in general, is the least degraded of all the developed portions of the Bay Area. Because of the prevailing westerly and northwesterly winds, San Francisco is more a generator of its own air quality problems (especially CO and TSP) and a contributor to those in other parts of the Bay Area (especially ozone), than a recipient of pollutants from elsewhere.

The BAAQMD operates an air quality monitoring station about 2.5 miles south of the site. A three-year summary of the data collected, and the corresponding ambient air quality standards, are shown in Table F-1, Appendix F, p. 275. These data show occasional excesses of the most stringent ozone, CO, TSP, and NOx standards.

Highest annual pollutant concentrations in San Francisco, while exhibiting fluctuations due to variations in meteorology, have shown an overall improvement during the 1971-1980 period. No similar trend in the annual number of standard excesses is evident, although such excesses are infrequent.

Emissions from motor vehicles are the largest source of HC and NOx (precursors of ozone) and CO in San Francisco, while paved road travel (dust emissions) and power plant fuel combustion are the largest sources of TSP and sulfur oxides (SOx), respectively./2/

NOTES - Air Quality

/1/ Association of Bay Area Governments (ABAG), BAAQMD, MTC, 1979, San Francisco Bay Area Environmental Management Plan, 1979 Bay Area Air Quality Plan.

/2/ California Air Resources Board (CARB), 1979, Emission Inventory 1976.

## G. NOISE

As is typical of Downtown San Francisco, the noise environment of the site is dominated by vehicular traffic noise. The Environmental Protection Element of the Comprehensive Plan indicates an existing day-night average noise level (Ldn) of 70 dBA on Bush St. and 70 dBA on Montgomery St./1,2/

NOTES - Noise

/1/ Decibel (dB) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, exert a force known as a sound pressure level (commonly called "sound level"), measured in decibels. dBA is decibel-corrected for the variation in frequency response of the typical human ear at commonly-encountered noise levels.

/2/ Ldn is an averaged sound level measurement, based on human reaction to cumulative noise exposure over a 24-hour period, which takes into account the greater annoyance of nighttime noises. Noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

## H. GEOLOGY, SEISMOLOGY AND HYDROLOGY

### GEOLOGY

The site is on gently sloping land approximately 4,600 ft. west of San Francisco Bay. Site elevations range from about 24 ft. above San Francisco Datum (8.6 ft. above mean sea level) in the southeast corner to about 35 ft. above San Francisco Datum in the northwest corner. Higher land is located to the northwest at Nob Hill, to the north at Telegraph Hill, and to the southeast at Rincon Hill.

Based on a geotechnical analysis for the site, the following geologic profile is expected. Approximately 60 to 110 ft. of non-rock materials overlie bedrock. The uppermost 18 to 32 feet of the geologic profile of the site consist of unengineered artificial fill including dune sand, silt, clay, rock waste from building excavations, organic material, and garbage. This is underlain by layers of sandy clays, dense sands, stiff, hard clays, and finally bedrock./1/ A geologic profile of the site is provided in Appendix H, p. 277. The dense, sandy clays are capable of bearing heavy loads with compressions of no more than one or two inches and are therefore suitable as a foundation base./1/ The artificial fill material, however, is generally unsuitable as a foundation base as it is subject to compression and differential settlement under heavy building loads.

### SEISMOLOGY

No active faults are known to be located within the City, but several active faults are nearby and could affect the project./2/ These include the San Andreas Fault, about 9.5 miles southwest of the site; the Hayward Fault, about 15.5 miles east of the site; and the Calaveras Fault, about 30 miles east of the site (see Figure H-1, p. 278, in Appendix H).

Both the San Andreas and the Hayward Faults have a recent history of major and minor movement. Large and small earthquakes can be expected in the Bay Area in the future. Within approximately the next 125 years (estimates of

recurrence intervals vary),/3/ at least one earthquake of the magnitude of the 1906 San Francisco earthquake (Richter magnitude 8.3 /4/) can be expected to affect the proposed building. Several moderate earthquakes, comparable to the 1957 Daily City earthquake (Richter 5.3), can also be expected to affect the proposed project.

The maximum expected earthquake that could affect the site could potentially cause "strong" ground shaking, which would produce general, but not universal, falling of cornices and cracking of masonry and brickwork. Collapse of new structures would probably be uncommon. The maximum expected earthquake could also cause liquefaction,/5/ with resultant lateral ground slippage and bearing capacity failure,/6/ or settlement of foundation-bearing materials.

HYDROLOGY

No water bodies, springs or watercourses are located on or near the project site. Surface runoff from the sloping site drains naturally to southeast, is discharged into a combined sanitary sewer and storm drain system, and is transported to the North Point Water Pollution Control Plant. The drainage system is designed to handle the runoff which would occur during a five-year storm./7/ Runoff from larger storms may exceed the capacity of the system, however, and the excess is carried in the streets. In addition, due to insufficient treatment capacity, stormwater runoff currently causes an average of 80 overflows of wastewater per year into the Bay. Wastewater management system improvements currently under design and construction would reduce the number of such overflows from large storms to approximately one to eight per year./8/

The groundwater table at the site is about 35 ft. below street grade, at an elevation of -9 feet, San Francisco Datum, and may slope downward from the northwest to southeast with the slope of the site./9/

NOTES - Geology, Seismology and Hydrology

/1/ Harding Lawson Associates, Geotechnical Investigation, 38 Story Office/Apartment Building, 333 Bush St. San Francisco, Calif., July 16, 1982., March 29, 1982.

/2/ Active faults are those which have a historic record of activity or show other geophysical evidence of movement within about the last 10,000 years.

/3/ Jim Dietrich, Director, Earthquake Prediction Program, U.S. Geological Survey, telephone communication, May 3, 1982.

/4/ The Richter Scale measures magnitude of earthquakes based on the ammount of energy released . It is a logarithmic scale, with each full point increase representing 30 times as much energy released as the previous point (i.e. a magnitude 5 earthquake releases 30 times as much energy as a magnitude 4 earthquake).

/5/ Liquefaction is the transformation of granular material, such as loose, wet sand, into a fluid-like state similar to quicksand.

/6/ Blume, John A., 1974, San Francisco Seismic Safety Investigation, Geologic Evaluation.

/7/ A five-year storm is the largest storm which would be expected to occur in a geographic area once in approximately five years. It has a 20% probability of occurring once any given year.

/8/ Don Hayashi, Director of Citizens Participation, San Francisco Clean Water Program, telephone communication, March 24, 1982.

/9/ C. Basore, Associate, Woodward-Clyde Consultants, letter concerning Crocker National Bank Headquarters (EE 78.298), August 16, 1978.

# IV. ENVIRONMENTAL IMPACT

An Initial Study for the proposed project was prepared, and published March 5, 1982, including the determination that an Environmental Impact Report was required. Issues that were identified as requiring no further discusssion as a result of the Initial Study include: land use compatibility, operational noise, public services and utilities, biology, and safety and health hazards. Therefore, this EIR does not discuss these issues. The Initial Study is incorporated herein as Appendix A, pp. 179-220, and may be referred to for a discussion of these issues.

## A. ARCHITECTURAL AND CULTURAL RESOURCES

### CULTURAL RESOURCES

The project would require the demolition of six medium-scale buildings on the site. One, the Financial Center Garage at 355 Bush St., is rated "B" in the Heritage Survey and "O" in the Department of City Planning 1976 Architectural Survey. It is a seven-story brick building, constructed in 1925 and, although a parking garage, was designed to appear as an office building (see Figure 19, p. 73) The building qualifies, according to the stated criteria, to be included on the list of architecturally and/or historically significant buildings estabished by City Planning Commission No. 8600 (May 29, 1980); it was omitted from the published list due to error. The other five buildings on site are not rated in either survey.

The project would adjoin an architecturally important group of retail buildings on the north side of Sutter St. between Kearny and Montgomery Sts. (see Section III, Environmental Setting, A. Architectural and Cultural Resources, p. 31). The project would contrast in size and scale with this group of buildings, but would be similar in height to the new 101 Montgomery St. building and Crocker Headquarters building at Post and Kearny Sts. The project would not alter the Sutter St. streetscape; however, it

would form a new backdrop to that streetscape. The setbacks on the upper levels of the proposed building would reduce its apparent scale and bulk, viewed in the background of the smaller scale structures.

The project would result in the long-term preservation of the adjacent Hallidie Building through the project sponsor's purchase and transfer of unused development rights above that building; an easement of light and air for 99-years restricting any structures on the Hallidie site to the existing seven story and one story (behind the Hallidie Building between that building and the project) heights; and purchase of a facade easement in perpetuity./1/ The Foundation for San Francisco's Architectural Heritage (Heritage) has stated it would not opose the demolition of the Financial Center Garage under the condition that the Hallidie Building be preserved, in perpetuity, through the acquisition and use of the unused development rights in the proposed project or on another site./2/

ARCHAEOLOGY

The project site is inland of the original shoreline of Yerba Buena Cove. Therefore, discovery of historic ships during excavation is unlikely. The project would require minimal new excavation because most existing structures on the site have basements. The project would be expected to have no effect upon subsurface historic or prehistoric resources.

NOTES - Architectural and Cultural Resources

/1/ Letter, June 15, 1982, Peter Clark, Campeau Corporation California, to Randall S. Rossi, Ph.D, Environmental Science Associates, Inc. describing the purchase of development rights, light and air, and facade easements. On file at the Office of Environmental Review, 450 McAllister St., 5th Floor, San Francisco.

/2/Letter, March 25, 1982, H. Grant Dehart, Executive Director of Heritage, to Peter Clark and Gary Mason, Campeau Corporation California, which states: "The Board of Directors reviewed the recommendations of the PPC (Preservation Policy Committee) at its March 18 meeting and has agreed not to object to the demolition of the Financial Center Garage at 355 Bush (rated "B" in Splendid Survivors) under the condition that the Hallidie Building at 130-150 Sutter Street will be preserved, in perpetuity, through the acquisition and use of the Hallidie properties unused development potential in your proposed development, or on another site."

## B. LAND USE AND ZONING

### LAND USE AND ZONING

The project would respond to major provisions of the Comprehensive Plan, and the description of the C-3-O, Downtown Office District in Section 210.3 of the Planning Code as "playing a leading national role in finance, corporate headquarters and service industries and serving as an employment center for the region." The project would conform with the height and bulk requirements for the area: the 500 ft. building height would equal the 500-ft. maximum height permitted; the maximum exterior facade dimension of the building tower would be about 152 ft., 18 ft. less than the maximum permitted building length of 170 ft.; the maximum diagonal dimension would be approximately 172 ft., 28 ft. less than the maximum permitted diagonal dimension of 200 ft. (above a height of 150 ft.). The project uses would be similar to, and compatible with, existing and proposed land uses in the project vicinity.

The permitted basic floor area ratio (FAR) of parcels comprising the site is 14:1; based on a site area of 31,590 sq. ft. this could permit 442,260 sq. ft. of development. However, one-half of the development rights of Lot 26 (or 28,875 sq. ft.) were previously used in the development of the 101 Montgomery St. building. Therefore, at present, 413,385 gross sq. ft. is available for development, corresponding to an FAR of 13.1:1 over the total site. To this could be added 119,000 sq. ft. of transferable development rights from the immediately adjacent Hallidie Building on the south. In addition, the project proposes to obtain, by Conditional Use authorization, 113,532 sq. ft. of bonus area for multiple building entrances, plazas, proximity to rapid transit and side setbacks under Ordinance 240-80, which allows the application of development bonuses, to residential uses only. The project would add about 500,010 gross sq. ft. of office space (proposed 521,805 gross sq. ft. of office minus existing 17,670 gross sq. ft. of office) to the current 16.1 million gross sq. ft. of net new cumulative downtown development under construction or approved (as of August, 1982).

Through the proposed provision of about 11,800 sq. ft. of public plazas and private, as well as common open space for residents, the project would conform with Policy 4 of Objective 6 of the Commerce and Industry Element of the Comprehensive Plan by providing "amenities for those who live, work and use Downtown." The open space requirement for residential use in the C-3-O District (Section 135 (d) of the City Planning Code) would be 2,020 sq. ft. of private open space, or, if provided as common open space, about 2,680 sq. ft. (If private and common open space were provided as proposed in the project the minimum would be 2,590 sq. ft.) The open space requirement for the residential units on the lowest residential floor would be satisfied by the proposed private, outdoor space on the setback roof area. Open space for the other units would be provided as common open space on the building's rooftop. The proposed rooftop plaza, an area of about 4,000 sq. ft., would satisfy all of the open space required for the residential portion of the project. The project's residential units would require a variance from the rear yard requirements of Section 134 of the City Planning Code.

Through the proposed provision of 56 residential units, the project would respond to Objective 2 of Policy 2 of the Residence Element of the Comprehensive Plan which recommends "multiple residential development in conjunction with commercial uses in the Downtown commercial area." The proposed project, in providing on-site housing in the Financial District, could encourage the establishment of residential services within the vicinity as the amount of residential land use in the Downtown district increases.

GUIDING DOWNTOWN DEVELOPMENT

In May 1981, the Department of City Planning published Guiding Downtown Development (GDD), a report containing a series of regulatory porposals for managing development in downtown San Francisco. As of this writing, the City Planning Commission has not voted on approval of GDD. However, according to Planning Commission Resolution No. 9240, environmental impact reports for projects proposed in the downtown area must include an alternative conforming to GDD development proposals. See Section VII. Alternatives to the Proposed Project, pp. 161-163, for such an alternative, and Table 4, p. 65, for a comparison of existing development controls with those proposed by GDD. GDD

recommends that the Basic FAR for the project site be changed from the present 14:1, to 12:1 with an additional FAR of 5:1 allowable for residential use. The allowable height is recommended to be reduced from 500 ft. to 400 ft. As proposed, the gross commercial office floor area of the project would exceed the GDD recommended FAR of 12:1 by 4.8:1. The 3.6:1 FAR proposed for housing would be less than the GDD allowable maximum FAR of 5:1 for on-site housing. At a total FAR of 20.1:1, the project would exceed the GDD maximum FAR of 17:1 by 3.1:1. GDD recommends that the average floor area of floors above the midpoint of the building height be about two-fifteenths less than the average floor area of floors below the mid-point. The sculptured upper-level setback of the project would conform to this provision. The proposed height of 500 ft. would exceed by 100 ft. the 400 ft. maximum recommended in GDD. No increase in height, for residential uses, would be permitted by GDD in 400-ft. height districts.

The project would include ground-floor retail space, encouraged by GDD. Public works of art, valued at 1% of construction costs, are also recommended in GDD. Art work would be provided at the ground level of the project but its value has not yet been determined. GDD policies suggest that one sq. ft. of public open space or recreation area be provided for every 25 sq. ft. of gross office floor area. Applied to the commercial portion of the building only, the recommended amount of open or recreational space would be about 21,280 sq. ft./1/ The project as proposed would have about 11,800 sq. ft. of open space on the Terrace Level plazas in addition to public space in entry and lobby areas. Under GDD, open space requirements for residential uses would be as required in Sec. 135 of the City Planning Code. The project would exceed these requirements with over 4,000 gross sq. ft. of common and private open space for use by project residents.

NOTES - Land Use and Zoning

/1/ Total office/commercial would be 532,000 gross sg. ft. Site area is 31,590 sq. ft. Therefore:

$$\frac{532,000}{25} = 21,280$$

TABLE 4: COMPARISION OF EXISTING DEVELOPMENT CONTROLS TO PROPOSED CHANGES CONTAINED IN GUIDING DOWNTOWN DEVELOPMENT, MAY 1981

| Major Development Controls Pertaining to Project Site | Present Requirements- City Planning Code and Interim Controls | Proposed Requirements- Guiding Downtown Development | Proposed Project |
|---|---|---|---|
| BASIC FAR | 14:1 | 12:1 office; Additional FAR allowable for provision of housing (5:1); retention of or transferring development rights from architecturally significant buildings (3:1); 17:1 maximum. | 13.1 basic commercial plus 3.6:1 residential, plus 3.8:1 transfer of development rights; total 20.1:1. |
| Height Limit | 500 ft. | 400 ft. | 500 ft. |
| Average Area per Floor | not specified | 20,000 sq. ft. above 65 ft. | 17,500 sq. ft. above 65 ft. (for office floors). |
| Maximum Diagonal<br>Maximum Length | 200 ft. above 150 ft.<br>170 ft. above 150 ft. | 200 ft. on any floor; lower floor may be greater if reductions made in upper floors. | 170 ft. above 150 ft. in height.<br>152 ft. |
| Size of Upper Floors | Not specified | Average floor area of floors above midpoint of building height to be 2/15 (13%) less than average floor area of floors below midpoint. | Average floor area of residential floors (Floors 31 to 38) 28% less than average floor area of office (for floors 2 to 29). |
| Incorporation of Art | Not required | Art equal to 1% of total construction cost. | Art proposed for ground floor; value not yet determined. |
| Ground-floor retail | Not required | Maximum additional FAR of 0.5:1; limited to 2,000 maximum sq. ft. per establishment to obtain floor area bonus. | 10,580 gross sq. ft. proposed to accommodate eight tenants, or about 2,600 sq. ft. per establishment. |
| Recreation/Open space | Not required | One sq. ft. for public use per 25 sq. ft. of gross floor area (excluding residential space) (about 25,850 sq. ft. for the project at an FAR of 20.1:1). | 11,800 sq. ft. of public open space (plazas); more than 4,000 sq. ft. of common and private open space for use by project residents; 15,800 sq. ft. total. |
| Off-street loading | 1 space for buildings containing 100,001-200,000 gross sq. ft.; 2 spaces for buildings containing 200,001-500,000 gross sq. ft.; 3 spaces plus 1 for each additional 400,000 sq. ft. for building containing over 500,000 gross sq. ft. (Four spaces for the site.) | Office - 0.1 spaces per 10,000 sq. ft. of gross floor area; Retail - one space for building containing 10,001-50,000 sq. ft. Residential - one space for building containing 100,001-200,000 sq. ft. (seven spaces for the site). | Equivalent of seven spaces (a combination of four truck and six vans spaces) in accord with CPC resolution No. 9286. |

Continued on following page.

TABLE 4: COMPARISION OF EXISTING DEVELOPMENT CONTROLS TO PROPOSED CHANGES CONTAINED IN GUIDING DOWNTOWN DEVELOPMENT, MAY 1981 (continued)

| Major Development Controls Pertaining to Project Site | Present Requirements- City Planning Code and Interim Controls | Proposed Requirements- Guiding Downtown Development | Proposed Project |
|---|---|---|---|
| Long-term Parking | Planning Code requirements for parking applicable to other zoning districts do not apply in Downtown C districts; that is no parking is required in these districts except for residential use, where 1 space for each 4 units is required. Parking is limited to up to 7% of the building's gross floor area. | None permitted for office uses. | Long-term parking for residential and commercial use; 56 spaces. |
| Provision of a Transportation Broker | None required | Proposed Requirement | Transportation broker would be part of the project. |
| Provision of Housing | None required | Estimated housing demand from office development of more than 50,000 sq. ft.: 640 sq.ft. per 1,000 sq. ft. of office space (about 464 units for the site); Maximum FAR equal to 5:1 on-site. | 56 two-bedroom on-site condominiums generating 112 housing credits proposed. |
| Historic Preservation | None required Allows transfer of development rights to adjacent parcels. | GDD contains a list of buildings of architectural and/or historic merit and encourages their preservation. Allows transfer of development rights. | Long-term preservation of the adjacent, historically significant Hallidie Building through transfer and utilization of its unused development rights. |

SOURCE: City Planning Code; and Guiding Downtown Development, May 1981.

## C. URBAN DESIGN

### DESIGN

The project tower would be sited to provide maximum separation from existing and possible future neighboring structures. It would rest on a 25 to 30 ft. tall base structure, or podium, that would extend along the perimiter of the lot from the rear of the French Bank, on Trinity St., to the Hotel Stanford on Bush St. The base structure would be lower than the immediately adjacent buildings. The roof level of the podium, not covered by the first tower floor, would have two landscaped public plazas (see Figure 6, p. 22).

The tower would have regular, framed window openings flush with the building's granite facing. The glazing would be tinted in the tower and clear in the windows at the base. The exterior surface would be medium grey granites; the sponsor is presently considering three, related shades of grey. The overall combination of the windows and granite facade would be designed to create a pattern on the building surface.

The Bush St. frontage would include, from west to east, retail space, the residential entry, combined service and parking entry, main lobby, and retail shops. The residential entry's landscaped interior would be open to view from the street. The main lobby doors would be set back from the street. The main entry would be flanked with two broad (10 ft.) stairs to the public plazas at Terrace Level (see Figure 5, p. 21). Small-scale retail uses would be located on the Bush-Trinity Sts. corner and along the full Trinity St. frontage of the site. The project would result in less total frontage of retail uses along the site than presently exists (348 ft. at present; 272 ft. for the project).

The project would enhance the pedestrian environment in the site area by continuing ground floor uses (although total retail area would be reduced), providing public plazas and encouraging pedestrian activity along Trinity St. A continuous street facade would be maintained along Bush St. as the building's base would be built out to the Bush St. property line. The 25- to 30-foot building base would be lower than nearby older buildings which range from two to seven stories. 101 Montgomery St., across Trinity St. from the site will be 28 stories tall upon completion.

The design of the Trinity St. frontage would be coordinated to the maximum extent feasible with the design of street level of the facing development (101 Montgomery St. building) and with the paving to be installed on Trinity St. by the developers of 101 Montgomery St. as a condition of that project approval. The project's architects intend the design, scale and detail of the Trinity St. frontage to create a setting that would enhance pedestrian use of the street. All plans for the improvement, use or design of project elements that affect Trinity St. would be reviewed by the City Planning Department and coordinated with plans of the Department of Public Works, fire, police and emergency services departments.

The project tower would have larger floors at its lower, office levels, and smaller floors at the top, residential levels. The top of the tower would be configured in a manner compatible with residential unit planning, which would result in an articulated profile.

The relationship of the project to adopted City plans and policies for urban design is reviewed in Table 5, p. 69.

VISUAL QUALITY

Views of the project from adjacent streets would include all or parts of the building tower. Although Figure 19, p. 73 does not show the top of the project, views of the project from Kearny St. at Bush St. would include the full height of the tower (Figure 19, p. 73), as would the view from Grant and Bush Sts. (Figure 18, p. 72), as viewers would look up, not just from a fixed position. From the Montgomery and Bush Sts. intersection, the project would be partially obstructed by the Alexander Building (see Figure 3, p. 19). The project would be visible from Sutter St. between Kearny and Montgomery Sts. above and behind the Hallidie Building. From Montgomery at Sutter St., views of the project would be obstructed by the California Pacific Building and the 101 Montgomery St. building, now under construction.

The project would interrupt some views of Potrero Hill, to the south, from the upper floors of the Russ and the Mills buildings, within one block north and northeast of the site, respectively. Existing short-range views of the Hunter-Dulin Building from the northwest would be blocked (see Figure 20, p.74

TABLE 5: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN POLICIES OF THE SAN FRANCISCO COMPREHENSIVE PLAN* AND THE PROPOSED PROJECT

| APPLICABLE URBAN DESIGN POLICIES | RELATIONSHIP OF PROJECT TO APPLICABLE POLICIES |
|---|---|
| A. Policies for City Pattern | |
| 1. Policy 1-"Recognize and protect major views in the City, with particular attention to those of open spaces and water." (p. 10) | The project site fronts a major view corridor (Bush Street) designated in the Comprehensive Plan. The project would not interrupt views towards the Bay, which are presently blocked at the foot of Bush St. by intervening buildings, nor would it block views of any existing open space. The project would interrupt some views of Protrero Hill to the south from the upper floors of the Russ Building. Existing short-range views of the Hunter-Dulin Building from the northwest would be blocked. |
| 2. Policy 2-"Recognize, protect and reinforce the existing street pattern, especially as it is related to topography." (p. 10) | The project base would be built out to the property line, maintaining the continuous street facade along Bush Street. A low-rise frontage of retail establishments would be created along the entire site on Trinity St. and on Bush St. at the project corner. |
| 3. Policy 3-"Recognize that buildings, when seen together, produce a total effect that characterizes the City and its districts." (p. 10) | The sculptured tower would be a visible, but not prominent, addition in many distant views of the downtown skyline. It would join a number of other comparably sized, relatively recent high-rise buildings in the downtown area. Collectively, these buildings provide the major visual identification for the central business district. |

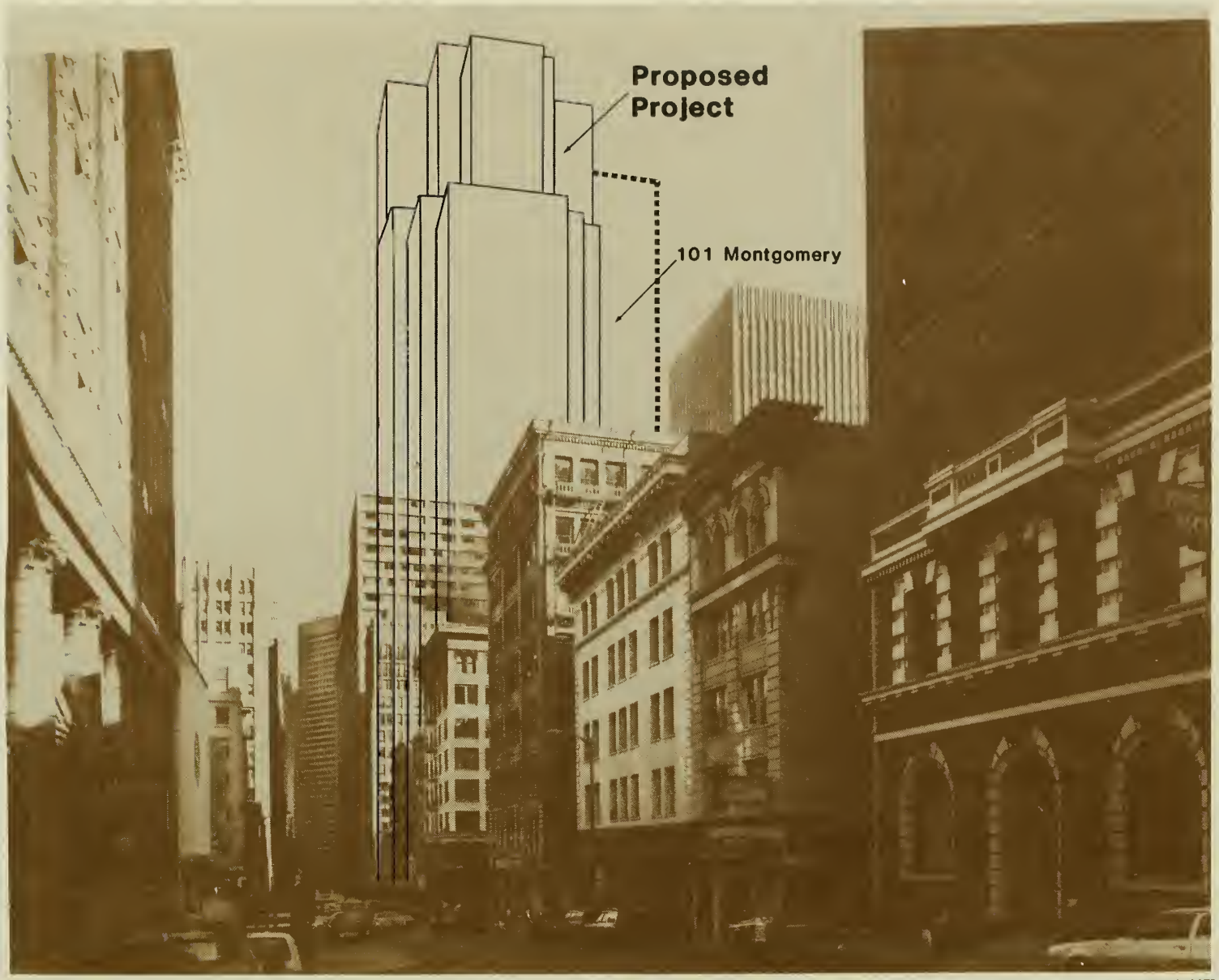
*City and County of San Francisco, 1971, Comprehensive Plan, Urban Design Element. (page references shown in parentheses).

SOURCE: Environmental Science Associates, Inc.

| | | |
|---|---|---|
| 4. | Policy 6-"Make centers of activity more prominent through design of street features and by other means." (p. 12) | The project would include retail shops along Trinity St., maintaining retail establishments on the site and enhancing the pedestrian environment. Street furniture is not presently included in project plans. No detailed landscaping plans are presently available. The City has designated Trinity Street as a Pedestrian Transit Service Street but has no designated improvement plans for it. |
| 5. | Policy 8-"Increase the visibility of major destination areas and other points for orientation." (p. 13) | See Item 2 above. The project would introduce another tower into the skyline of the central business district and would reinforce the visual identity of the Bush/Montgomery Sts. intersection as a major Financial District activity center. |
| B. | Policies for Conservation | |
| 6. | Policy 4-"Preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development." (p. 25) | By dedication of a facade easement and transfer and utilization of development from the historically and architecturally significant Hallidie Building the project would assume the long-term preservation of that building. The project would require the demolition of a parking garage constructed in 1925 and rated "B" by Heritage and "0" in the Department of City Planning, 1976 Architectural Survey. |
| 7. | Policy 6-"Respect the character of older development nearby in the design of new buildings." (p. 25) | The project would differ in style and scale from neighboring older buildings. The building base would be 25-30 ft. tall at the Bush and Trinity Sts. corner and along all of its Trinity Street frontage. This would be from 2 to 4 stories lower than immediately adjacent older developments and of similar height as several of the structures that it would replace. |

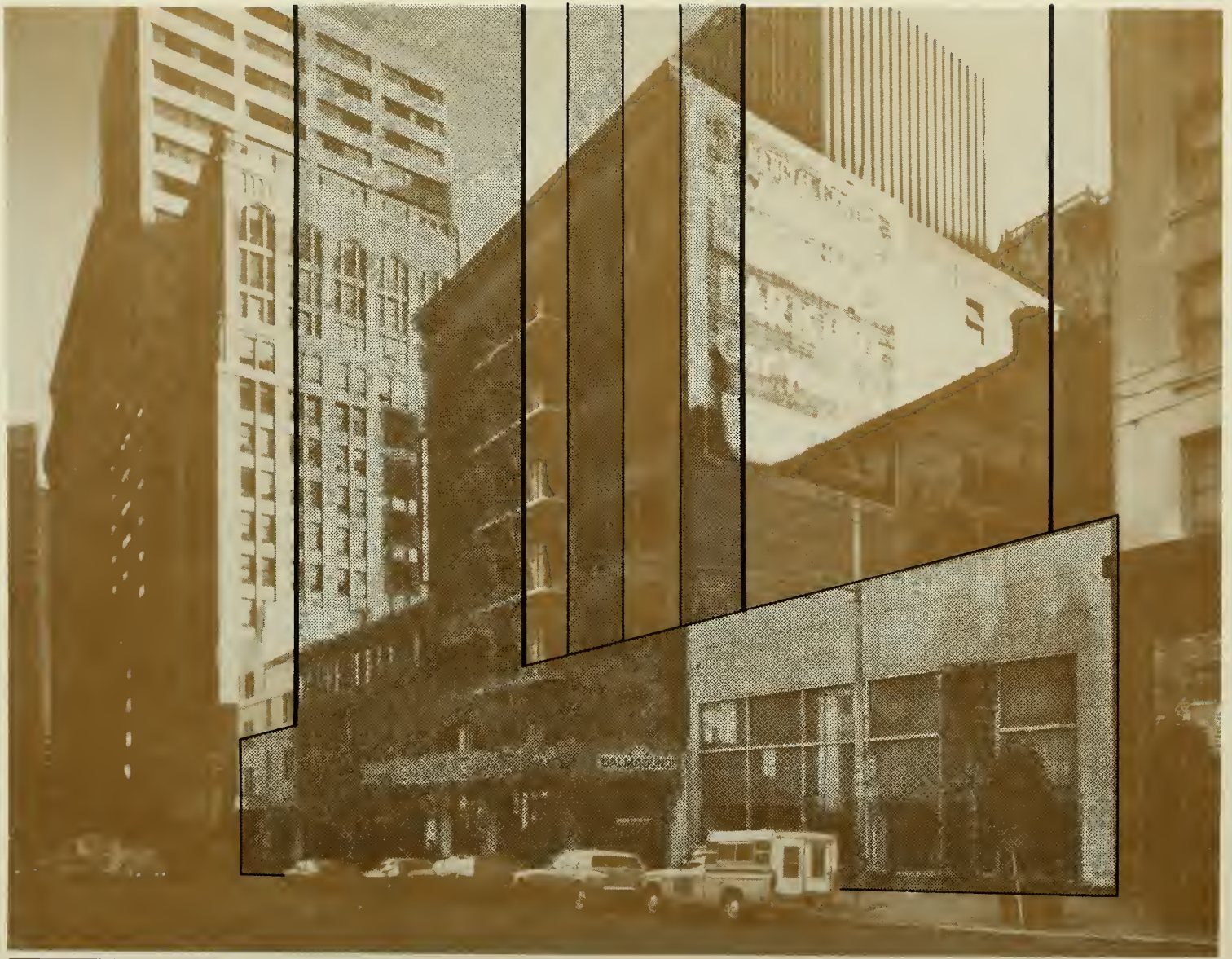
C. Policies for Major New Development

| | |
|---|---|
| 8. Policy 1-"Promote harmony in the visual relationships and transitions between newer and older buildings." (p. 36) | The building form would consist of a tower on a low-scale base. This configuration would provide a visual transition between the mid-rise buildings west of the project and the high-rise buildings east of the project. |
| 9. Policy 2-"Avoid extreme contrasts in color, shape, and other characteristics which will cause new buildings to stand out in excess of their public importance." (p. 36) | The project would be rectilinear in form with a stair-step setback on all corners occuring at the 28th floor. The exterior surface would be medium grey granite; the use of three related shades is under consideration. Windows on the upper floors would be tinted and ground level windows would be clear. |
| 10. Policy 4-"Promote building forms that will respect and improve the integrity of open spaces and other public areas." (p. 36) | See Item 1 above. The project would not shade any existing public park or plaza. The tower bulk would be less than the maximum permitted, and would block less sunlight than would an alternate project of maximum allowable horizontal dimensions. The project would include 11,850 sq. ft. of publicly accessible plaza area. |
| 11. Policy 5-"Relate the heights of buildings to important attributes of the City pattern and to the height and character of existing developments." (p. 36) | The project would be comparable in height to other high-rise buildings which comprise the downtown skyline, shorter than several major buildings in the area, and taller than buildings on the west. Nearby buildings to the east are similar in height; mid-rise and low-rise buildings to the west are smaller scale. The project height of 500 ft. would equal the permitted maximum height of 500 ft. |
| 12. Policy 6-"Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating apperance in new construction." (p. 37) | The maximum horizontal dimensions of the project would be generally greater than those of neighboring older buildings and comparable with nearby high-rise structures. The tower would be set back form the property line on the east (Trinity St.) and on the west, although the base structure would be built out to the property line. The 25-30 foot building base would relate to pedestrian scale and would help relate the project to neighboring older buildings. |




SOURCE: Environmental Science Associates, Inc.

FIGURE 18:
View of the Site from
Bush and Grant Streets




SOURCE: Environmental Science Associates, Inc.

**FIGURE 19:**
**View of the Site from Kearny and Bush Streets**


Proposed Building

SOURCE: Environmental Science Associates, Inc.

FIGURE 20:
View of the Hunter-Dulin Building Over the Financial Center Garage Annex

Medium-range views of the Hunter-Dulin Building from Grant and California Sts. would also be blocked. The project tower would have a sculptured shape and would be set back on all sides and corners from adjacent structures. Bulk would be less than the maximum permitted at the site.

The project would be visible from long-range viewpoints as well as from nearby buildings and street level areas in surrounding blocks. From Twin Peaks, the project would be visible as part of a prominent group of high-rise buildings of similiar or greater height (see Figure 21, p. 76). The project would be visible in the downtown skyline from higher topography and buildings to the west, northwest and south. A small portion of the top of the building would be visible in the skyline from the east.

SUNLIGHT AND SHADOW

The project, in replacing mid- and low-rise structures on the site, would create more extensive shadow patterns than exist at present. At the pedestrian level there would be no change during December days because Bush St. is presently in shadow. Much of the project shadow pattern would coincide with those cast by existing structures in the area including the Russ, 180 Montgomery St., Hunter-Dulin, and Wells Fargo buildings. The project would shade some sidewalk areas; it would not shade any other existing public areas, parks or open spaces.

Figures 22 through 24 (pp. 78-80) show the projected shadow patterns in the vicinity of the site, at 8:00 a.m., 1:00 p.m., and 4:00 p.m. during mid-December, mid-March and mid-September, and mid-June. A review of these shadow patterns shows that the Bush St. sidewalks on, and across from, the project block would be in shade, as they are presently, at all times except for mornings and late afternoons (8:00 a.m. and 4:00 p.m. figures) in mid-June and, for the east end of the north sidewalk, mornings in spring and fall. The project would add new shade to Bush St. in early afternoons during the summer.

In mid-December, the project would cast morning shadows on Kearny St. from Bush to Pine Sts., coincident with those cast by 101 Montgomery St. (under construction). During midwinter mornings the project shadows would overlap existing shadows at Kearny and Pine Sts. During the noon hour in mid-December


SOURCE: Environmental Science Associates, Inc.

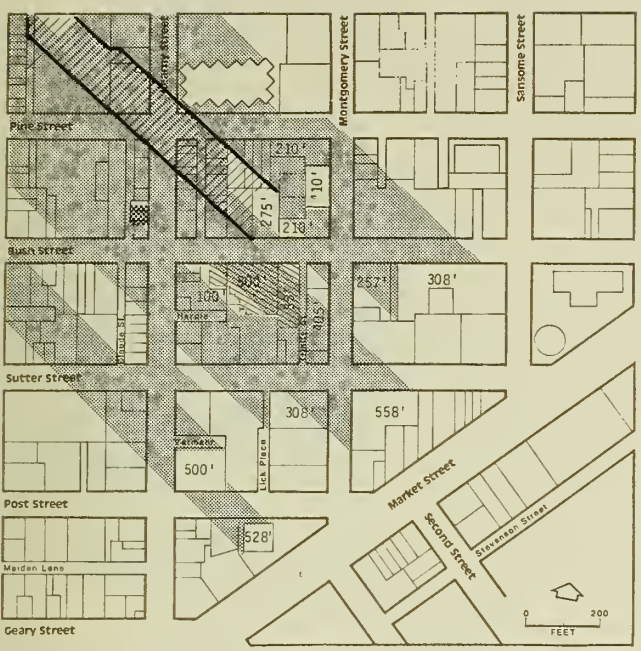
FIGURE 21:
View of Project from Twin Peaks

(represented by the 1:00 p.m. figure), the project shadow would extend north across Bush St. onto the Russ Building coincident with existing shadows. The project would not add any new shadows to Montgomery St. between Pine and California Sts. because the Russ Building already shades this sidewalk. During the late afternoon hours the project would cast long northeastward shadows, shading the project's east plaza, and adding new shade to the south wing of the Russ Building. All other shadows created by the project at these times would fall on rooftops in the Mills Building block.

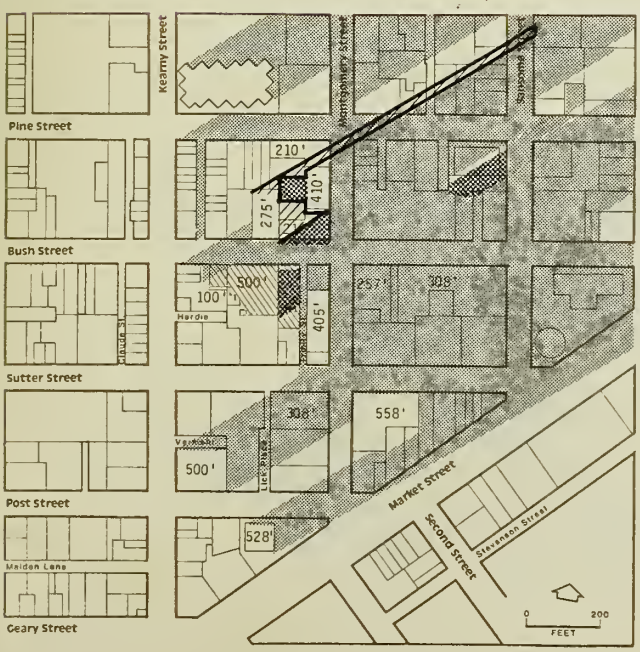
During mid-March and mid-September, the morning northwestward shadow cast by the project would overlap existing shadows shading the Kearny / Bush St. intersection, a portion of Kearny St. between Bush and Pine Sts., and the tops and sides of buildings along this portion of Kearny St. The project would not add any new shade to these areas during mid-March and mid-September mornings. Shade from the proposed Russ Tower, across Bush St. from the site, would shade the northern part of this block of Kearny St. At noontime, project shadow would fall on buildings to the north and on Bush St. and sidewalks. The late afternoon shadow of the project would be cast eastward and, like the mid-December afternoon shadow, would add new shade to the rooftops and sides of mid-rise buildings on Bush St. between Montomery and Sansome Sts., northeast of the site, the Montgomery / Bush Sts. intersection, and the Alexander Building. Project shadow would not fall on the rooftop plazas of the Russ Building.

Shortest shadows would occur during mid-June because of the sun's high angle in the sky. During morning hours the building would cast new shadow westward on the roofs of buildings adjacent to the site between Bush and Sutter Sts. A portion of this area would also be shadowed by 101 Montgomery St. and 180 Montgomery St. buildings. During the noon hour the project would shade both Bush St. sidewalks and the San Francisco Curb Exchange building. Mid-June late afternoon shadows from the project would newly shade the roof of the Alexander Building, and the west side of the 101 Montgomery St. building. The project shadow would overlap existing shadows on the Bush St. sidewalk.

The two plazas proposed for the second floor of the project would be in shade much of the year because of existing or proposed high-rise development. The building would partially or fully shade its own plazas at the following



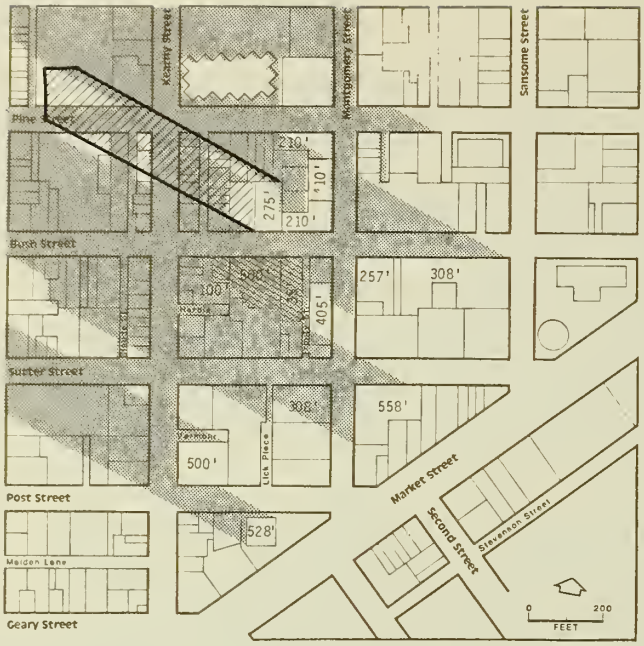

1 P.M.

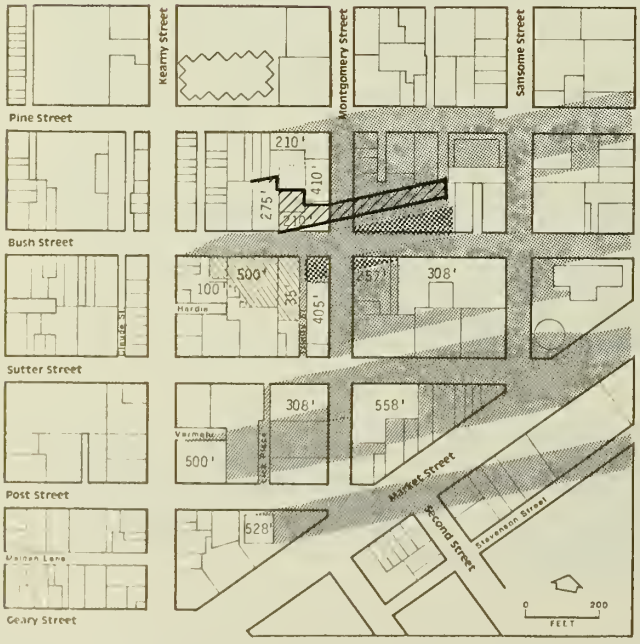

## Legend

- Project Shadow (new shadow only)
- Shadow of Proposed Buildings Other than Project
- Existing Shadow

FIGURE 22:
Projected Shadow Patterns in Vicinity of Project Mid-December








**Legend**

- Project Shadow (new shadow only)
- Shadow of Proposed Buildings Other than Project
- Existing Shadow

FIGURE 23:
Projected Shadow Patterns in Vicinity of Project Mid-March and Mid-September

8 A.M.


1 P.M.


4 P.M.


## Legend

- Project Shadow (new shadow only)
- Shadow of Proposed Buildings Other than Project
- Existing Shadow

FIGURE 24:
Projected Shadow Patterns in Vicinity of Project
Mid-June

times: (1) during mid-December late in the afternoons a portion of the east plaza would be in shadow, and a small portion of the west plaza would also be in shadow; (2) during mid-December at the noon hour the project would shade its east plaza; (3) in mid-March and mid-September late afternoons the project would shadow the east plaza, but not the west plaza; (4) during mid-June mornings the west plaza would be in shadow, while the east plaza would be in a shadow cast by an adjacent building; (5) mid-June afternoons (4 p.m.) would expose the west plaza to sunlight while the east plaza would be shaded by the proposed tower. During mid-June and mid-September at noon time both the east and west plaza would be in sunlight. The project's plazas would probably receive their greatest use during the noon hours.

WIND/1/

Wind speeds at pedestrian level can be predicted by comparing recorded wind data with "wind speed ratios", which are ratios of pedestrian level wind speeds relative to the speed above the wakes of surrounding buildings (called the freestream wind speed)./2/ It should be noted that wind speed ratios are not actual wind speeds but ratios. Thus a point having a "very high" wind speed ratio could still experience light winds on a calm day. Likewise, a point found to have a "low" wind speed ratio could experience significant winds on an extremely windy day. For San Francisco, the commonly used definitions of pedestrian-level wind speed ranges are as follows:

| Wind Speed Ratio | Ratio of Pedestrian Level Wind Speed to Freestream Wind Speed |
|---|---|
| Low | 0.00 - 0.19 |
| Moderately Low | 0.20 - 0.29 |
| Moderate | 0.30 - 0.49 |
| Moderately High | 0.50 - 0.69 |
| High | 0.70 - 1.00 |
| Very High | Greater than 1.00 |

Wind tunnel tests of localized wind speeds and directions at, and near, the project site were conducted using a scale model of the site and vicinity, and using wind tunnel adjustments known to accurately model atmospheric boundary layers near the surface of the earth. Other proposed buildings included in the setting for wind tunnel testing included: 350 Bush St., 466 Bush St., 222 Kearny St., and 101 Montgomery St. The study included separate tests of

west, southwest, and northwest winds under existing conditions, and with the proposed project and others as noted./3/ Because west, southwest, and northwest winds are the most common in San Francisco, they are the most representative for evaluation purposes.

In addition to wind tunnel tests, on-site wind measurements were performed under west wind conditions on July 29, 1982, for the purpose of comparison with the wind tunnel measurements and to estimate wind effects on Trinity St. These tests showed that "...the wind tunnel results provided reasonable estimation of the wind environment when the wind-tunnel model is accurate."/4/ The following discussion describes modeled conditions for west, southwest and northwest winds.

West Wind

The existing near surface wind speed ratios are low, or moderately low, at all measured locations; wind speed ratios range from 0.07 to 0.27. The highest street-level wind speed ratios adjacent to the project site are along Bush St. between its intersections with Montgomery St. and Trinity St. In this stretch, the wind speed ratios vary, from east to west, from 0.16 in front of the project site to 0.27 at Trinity St., to 0.22 at the Bush and Montgomery Sts. intersection. Trinity St. currently has gusty winds and moderately low wind speed ratios. Winds west of Kearny St. on Pine, Bush, and Sutter Sts. are easterly due to a large recirculating wind flow on the downwind (east) of Nob Hill. The Bank of America Headquarters creates a large turbulent wake, which extends several blocks downwind (east) of the building.

The proposed project would create the following changes in the wind environment during west winds:

- More wind would be channeled along Bush St. directly north of the proposed building, creating an increase in wind speed ratios from low to moderately low (0.16 to 0.27). An increase in wind speed ratios from low (0.16) to moderate (0.30) would occur mid-block across Bush St., at the proposed Russ Tower.

- Wind speed ratios on Bush St. east of Montgomery St. would increase from low (0.15) to moderately low (0.27).

- Wind speed ratios would increase from 0.22 to 0.29 at the intersection of Montgomery and Bush Sts. The ratio would remain moderately low except at the northwest corner, where it would change to moderate.

- Winds on Post St. west of Kearny St. would become unsteady and would repeatedly change direction from west to east to west.

- Winds on Trinity St. and Bush St. would become less gusty and wind speed ratios would rise from .27 to .30, or from moderately low to moderate.

Southwest Wind

The existing near surface wind speed ratios are low and moderately low at all measured locations except along Kearny St. and Montgomery St., and at the Montgomery / Sutter and Montgomery / Bush Sts. intersections, where the ratios are moderate. Unsteady winds with moderately low wind speed ratios occur at the Trinity / Bush St. intersection, where wind speed ratios along Bush St. change from 0.13 to 0.26 (at Trinity St.) to 0.14, from west to east crossing the intersection of Bush and Trinity Sts.

The proposed project would create the following changes in the wind environment for southwest winds:

- Wind speed ratios would increase from 0.31 to 0.40 at the Kearny St. / Sutter St. intersection; ratios would remain in the moderate range. Due to a channeling of the wind on Kearny St. (mostly in the center portion of the street) the wind speed ratio would decrease 0.33 to 0.26 at the Kearny / Bush Sts. intersection and decrease from a wind speed ratio of 0.34 to 0.30 on the sidewalk area of the Kearny St. / Hardie Place intersection (site of proposed development at the northeast corner of Sutter and Kearny Sts.).

- At the Bush / Trinity Sts. intersection, the wind speed ratio would decrease from 0.26 to 0.19 (from moderately low to low). The channeling of the wind on Kearny St. would also cause a calm, low wind just north of the project site.

- With the project, easterly winds would prevail on Bush and Sutter Sts. west of Kearny St., compared to existing prevailing westerly winds on these streets.

Northwest Wind

The existing near surface wind speed ratios are low and moderately low at all measured locations. Part of the wind along Sutter St. turns onto Montgomery St. at the southwest corner of the Montgomery St. / Sutter St. intersection, and the southwest corner of the intersection has a wind speed ratio of 0.29 (moderately low) while the wind speed ratio on the northeast corner is 0.17 (low). Unsteady winds with low wind speed ratios occur on Trinity St. between Bush and Sutter Sts. A large turbulent wake is created by the Bank of America Headquarters and extends several blocks downwind (southeast) of that building.

The proposed project would create the following changes in the wind environment with northwest winds:

- Wind speed ratios at most locations near the site would increase slightly compared to the existing setting and would remain moderately low. This would not change the general environment with respect to pedestrian comfort.

- Wind speed ratios along Sutter St. would increase by an average of around 0.03, and would remain low. Wind speeds at the northeast corner of the Kearny St. / Sutter St. intersection would increase from a ratio of 0.12 to 0.19 (the top of the low range), as more wind would turn from Kearny St. onto Sutter St.

- The unsteady winds on Trinity St. would diminish, and the difference in wind speeds at measured points across the Montgomery St. / Sutter St. intersection would decrease.

- Low magnitude winds would reverse direction from southerly to northerly on Kearny St. at the Pine / Kearny Sts. intersection.

- Low magnitude easterly winds on Bush St. west of Kearny St. would occur. The existing setting has westerly winds of low magnitude.

The greatest change in the wind environment due to the project would occur with westerly winds, along Bush St. just north of the proposed building and at the Bush / Montgomery Sts. intersection, where existing low to moderately low wind speed ratios would become moderately low to moderate. The proposed project would also decrease wind speeds on Kearny St. and on Trinity St; the latter would have increased pedestrian use upon implementation of the project.

NOTES - Urban Design

/1/ This section is based upon a study, entitled "Wind-Tunnel Studies of the 333 Bush St. Building", February 1982, prepared by Dr. Bruce White. A copy of this document is included in Section X of this report as Appendix C (pp. 224-242).

/2/ Meteorological instruments used for recording the available data on wind speeds and directions are placed so that they essentially measure freestream wind speeds, i.e. above surface obstacles.

/3/ The tests included flow visualization tests, which placed a continuous stream of smoke at various locations to determine wind directions, and hot-wire anemometer measurements of wind speed ratios and turbulent intensities at 20 surface locations on and near the project site. (Please see Appendix C, pp. 224-242.)

/4/ Bruce White, Ph. D., letter report dated August 1, 1982, to Richard Grassetti, Environmental Science Associates, Inc. confirming results of on-site wind measurements conducted on July 29, 1982. A complete description of these tests and their results is on file at the Office of Environmental Review, 450 McAllister St. San Francisco, Fifth Floor.

## D. EMPLOYMENT, HOUSING AND FISCAL FACTORS

### EMPLOYMENT

#### Project-Related Employment

The project would displace existing tenants from six buildings. According to a tenant survey completed in March 1982, most tenants at the site would prefer to relocate in San Francisco, particularly in the Financial District. Some expressed concern about finding suitable space with comparable rent. No tenants had specific relocation plans; one has expressed an interest in relocating in the project./1/

About 2,130 permanent full-time jobs would be provided by the project. In the absence of specific information about project tenants, this number was derived by assuming an average number of sq. ft. per employee, by use, for the project floor area that would be devoted to each use (see Table 6). The net increase in employment at the site, after subtracting the approximately 138 existing jobs at the site in 1982, would be about 1,995.

#### Bay Area Employment Multiplier Effects

Secondary employment and income would result from permanent project employment because each employed person would generate additional employment by his or her demands for goods and services, through the multiplier effect. Assuming that the new jobs accomodated by the project were primarily in finance, insurance, and real estate (the so-called FIRE sector), about 2,390 additional jobs in other sectors of the Bay Area economy would result from the growth of FIRE businesses through the multipler effect.

TABLE 6: PROJECTED PERMANENT EMPLOYMENT AT THE PROJECT SITE

| Employment Type | Building Space (Gross Sq. Ft.) | Space Per Employee (Sq. Ft.) | Projected Number of Employees |
|---|---|---|---|
| Office | 521,800 | 250* | 2,087 |
| Retail | 10,600 | 400** | 27 |
| Building Maintenance | 532,400 | 30,000*** | 18 |
| TOTAL EMPLOYMENT | | | 2,132 |
| TOTAL EXISTING EMPLOYMENT (See Table D-3, p. 247) | | | 138 |
| NET INCREASE ON SITE | | | 1,994 |

* Department of City Planning "Office/Housing Production Program (OHPP) Interim Guidelines," January 1982.

** California Office of Planning and Research, Economic Practices Manual, January 1978, pp. 35 - 37.

*** High-rise buildings generally employ one janitor per 30,000 gross square feet (Rodger Dillon, Secretary-Treasurer, Building Service Employees Union, Local 87, telephone conversation, April 17, 1980). The 30,000 square feet per maintenance employee figure includes additional service personnel, such as security guards, building engineers and window washers.

SOURCE: Environmental Science Associates, Inc.

The total number of Bay Area jobs that would be supported by growth in downtown employment due to the project would be about 4,385 (1,994 net project jobs plus the 2,390 jobs induced by the multiplier effect). Assuming a construction labor cost of $38,500,000 and an average yearly construction wage of $35,000, the project would require about 550 person-years of construction labor throughout the approximately 24-month construction period. About 850 additional person-years of employment would be generated in the Bay Area as a result of the multiplier effect of project construction./2/

OFFICE SPACE

The proposed project, together with other major downtown office buildings under construction and approved (as of August 6, 1982) would result in about 17.4 million gross sq. ft. of office space if all were to be built (see Appendix E, Table E-2, p. 256). About 1.3 million gross sq. ft. of existing office space would be replaced by proposed development, resulting in about 16.1 million gross sq. ft. of net new office space.

If office employment in San Francisco were to continue to account for the same percentage of overall employment growth as it has in the decade 1970-80, projections by the Association of Bay Area Governments (ABAG) suggest that a net increase of about 1.25 million sq. ft. of office space would be required each year between 1980 and 1985 to accommodate that growth./3/ Demand for office space, however, could be greater. The ABAG projection indicates that 1.25 million additional sq. ft. of office space will be occupied each year. This could be because no more than that would be demanded or because no more would be supplied. If occupancy is limited by supply, then more than 1.25 million sq. ft. of new space would be occupied each year if more were built. Low vacancy rates and the rate of rent increase suggest a backlog of demand. One commercial real estate broker foresees that by 1984, 9.1 million sq. ft. of office space will be available, and all but about two million sq. ft. of this amount was leased as of January 1981./4/

The increase in office space would continue the trend of regional growth in service sector and office headquarters activity and employment. The larger, newer buildings would be occupied primarily by larger-space tenants and those with the ability to pay higher rents. Because rents are lower for older buildings, the space vacated by tenants relocating to newer buildings could become available for tenants who could not afford the higher rents for new office space./5/

HOUSING DEMAND

The project would attract out-of-area employees and contribute to the formation of additional households by existing area residents. It would also contribute to increased local housing demand and a jobs/housing imbalance.

Probable housing impacts of additional downtown employment are discussed in Five Fremont Center, Final EIR, (EE 80.268, Certification Date March 12, 1981), pp. 85-91, on file at the Office of Environmental Review, and hereby incorporated by reference into this EIR. In summary, many people are attracted to employment opportunities in the Bay Area because wages are relatively high but are unable to afford housing. Updating the information in that report, by 1990 the projected cumulative San Francisco housing demand resulting from Downtown office development will be about 14,700 units (see Table D-2, p. 246). This demand would exceed the projected growth in City housing stock by an estimated 2,700 housing units. This demand/supply imbalance is expected to cause some downtown employees to seek housing in other Bay Area locations.

Concerned with the impacts of cumulative office development on the San Francisco housing market, the City Planning Commission has recently been requiring office developers to cause housing to be constructed in the City as a condition of approval. Downtown office projects that have been approved are in the environmental review process, or are under construction total about 17.4 million gross sq. ft. of office space./6/ About 1.3 million gross sq. ft. of existing office space has been or is proposed to be demolished to clear the sites for these office developments. This results in a net addition of 16.1 million gross sq. ft. of new office space in downtown San Francisco. Assuming that the housing demand formula for new office development contained in "Office/Housing Production Program (OHPP) Interim Guidelines" (January 1982) reflects the demand for housing in San Francisco, office development would result in the demand for about 14,300 households in San Francisco when all projects are fully occupied./7/ This impact on the housing market would be mitigated to the extent that office developers have agreed to provide through City Planning Commission final approval resolutions, or have proposed on-site, about 3,300 housing units as of April 1982. Based on the OHPP formula, The unmet housing demand would be for about 11,400 units. This demand would be further reduced by projects that have been approved with a committment to an unspecified number of housing units.

The demand for 11,400 units that is assumed to be due to cumulative office development, but not satisfied through office developer-sponsored housing contruction, may result in higher housing prices, higher rents, and lower vacancy rates.

Downtown office workers who would desire housing in San Francisco but would be unable to find housing in the City would be forced to seek housing in other Bay Area communities. About 60% of the total number of new office workers are not expected to seek housing in San Francisco; in addition, a portion of the 40% who would desire to live in San Francisco would be unable to find housing here. The resulting demand for housing in other Bay Area communities attributable to downtown office development may result in higher housing costs and lower vacancy rates in these other communites. It is not possible to predict how such factors would affect these other communities or where those people preferring to live in San Francisco would settle if they are unable settle in San Francisco.

Residency patterns established by new project employees are based on assumptions developed by the San Francisco Department of City Planning in a Memorandum entitled "Housing Requirement for Office Development in San Francisco," July 1981, and by approximate residency patterns of downtown office employees surveyed for five other recent downtown office building EIRs (see Appendix D, Table D-2, p. 246). It is assumed that about 40% of project employees would reside in San Francisco, 18% on the Peninsula, 30% in the East Bay, and 12% in the North Bay. According to the Department of City Planning housing formula, employees of the project would generate a demand for 464 dwelling units in San Francisco./8/ Assuming the residential distribution pattern described above, the approximate number of new households to be generated outside of San Francisco as a direct result of project employment would be about 290 on the Peninsula, 480 in the East Bay, and 190 in the North Bay (see Appendix D, Table D-2, p. 246).

Based on the above projections, the amount of housing demand in San Francisco created by project employees would be about 3.7% of the City's projected housing growth from 1982 to 1990. (See Appendix D, Table D-2, p. 246.) Without detailed data on San Francisco housing demand (such as household's ability to pay, preferences, etc.) it is not possible to quantify the effect on City housing prices that would result from housing demand created by the proposed project.

The proposed project would provide about 56 residential condominium units on site, with sales prices ranging from $300,000 to $500,000 each (1982 dollars). Information from the San Francisco Board of Realtors shows that the average selling price of a home in the City in 1981 was $151,203./9/ Section 1341 of the San Francisco Subdivision Code requires provision of 10 percent low- and moderate-income housing in projects of more than 50 dwelling units, provided subsidies are available. No federal or state subsidies for housing are presently available to developers.

In order to satisfy the housing demand of 464 units generated by the project, the City Planning Commission could require that the project sponsor provide 408 additional units of housing in San Francisco, besides the 56 proposed on site. To assure that developers of new office buildings share the responsibility of increasing and preserving the City housing stock, particularly affordable housing, the City Planning Commission and the Mayor have established the San Francisco Office/Housing Production Program (OHPP) to be implemented by staff from the City Planning Department and the Mayor's Office of Housing and Community Development./10/ Under OHPP guidelines, the project sponsor could provide the additional units required by the City Planning Commission either by the construction of new housing units or the rehabilitation of vacant units. This could be accomplished either by direct sponsorship of a housing development or by providing financial aid to a housing development. As an alternative means of receiving housing credits, office developers may invest in the Citywide Affordable Bond Program as a holder of secured investment in a pool of funds to be used as shared appreciation mortgage in conjunction with bond proceeds.

HOUSING AFFORDABILITY

A substantiated analysis of housing affordability would require, first, determination of the number of households generated by the project preferring to live in San Francisco. This figure, in turn, would be related to net employment increase and residence location preference. As new office space would be primarily occupied by existing San Francisco businesses that would relocate, most new workers would be already employed in San Francisco./11/

Those project workers transferring from another place of employment within the City would not generate housing demand directly attributable to the project; however, as new employees occupy the vacated space there is an indirect increase in overall employment in the City.

New employment growth due to the project would occur as new jobs were created in older buildings which would be vacated by project employees. As tenants for the project are not known, it is impossible to predict which buildings would be vacated for the project (and which buildings would be then vacated to fill the former level of vacated space, etc.). Employee movements are dynamic; all employees new to the City attributable to the project would not be directly employed within the project. For the above reasons, it is not possible to precisely quantify new employees due to the project.

The projected regional distribution of project employees is contained in Appendix D, Table D-2, p. 246. Where an employee will live is the result of individual decision-making. Such decisions are a function of location preference and housing economics. Information concerning housing preferences would be obtainable through surveys of new office workers. Preference information is complex, involving many factors such as number of bedrooms, type of neighborhood, family composition, and commute distance to work.

Assuming that the number of new employees and their preferences for housing were known, the most critical variable affecting the housing affordability analysis would be a new household's ability to pay for housing. The salary of new workers alone is insufficient to determine housing affordability; for example, the total income of all members of a new worker's household must be known. A variety of published sources give salaries for various occupational categories, but no comprehensive data regarding the distribution of household income among office workers (or any other group of workers) exists. City-wide household income estimates based on the 1980 Census will be available 1983, but this data source will not reflect household income of downtown office workers.

Parameters that determine housing affordability for an individual household are illustrated in Appendix D, Figure D-1, p. 250. The ratio of housing expenses to income, according to the "Office/Housing Production Program (OHPP) Interim Guidelines," (January 1982) are 30% of household income for rental expenses and 38% of household income for home ownership expenses. The down payment for home ownership may be assumed to be between 10% and 20% of purchase cost; however, a household's ability to afford a down payment, would depend on household assets and liabilities, and would vary widely for different households. Assumptions regarding mortgage interest rates must also be made. Considering the volatility of interest rates in recent years, an affordability analysis based on current market interest rates might not be relevant when the project is completed and occupied.

A model of the housing affordability analysis is illustrated in Appendix D, Figure D-2, p. 251. Quantification of project impacts on the housing market is not possible based on available published information. A study of the "Feasibility of Performing a Housing Affordability Analysis" by Questor Associates (June 15, 1982) concludes that household income of project employees, distribution of housing demand, and magnitude of new demand can only be accurately determined by surveying occupants of buildings comparable to an office project. The study states that without such detailed information, "it is not feasible to quantify with reasonable accuracy the housing affordability parameters associated with new office construction."/12/

Based on available data, an approximation of a housing affordability analysis appears in Appendix D, Table D-4, p. 248. Data in the table rely upon published sources of office worker incomes (not household income), and prices of housing (without regard to housing availability). Assumptions are made regarding ratio of housing expenses to income, mortgage interest rates, and down payments. Analysis based on these data and assumptions indicate that most project employees would not be able to afford ownership housing in San Francisco, although a significant minority, depending on the number of workers per household, would be able to do so. Most project employees, except the lowest-paid clerical employees desiring to live alone, would be able to afford rental housing in San Francisco.

FISCAL FACTORS

Revenues To City

The project would have a fair market value of about $240 million (in 1982 dollars)./13/ Property in San Francisco is assessed at one hundred percent of fair market value. Based on the 1981-82 tax rate of $1.19 per hundred dollars of assessed value, the property would generate approximately $2,860,000 in property tax revenues in 1985, a net increase of about $2,800,000 over property tax revenues generated by the site in 1981-82. If the distribution of property tax revenues remains the same as in 1981-82, the project would generate approximately $2,270,000 in revenues to the City and County of San Francisco in 1985, a net increase of about $2,220,000 over property tax revenues generated to the City in 1981-82 (see Table 7, p. 95).

Payroll tax is paid on the earnings of about 140 existing employees at the project site. At a rate of 1.5% of total earnings, payroll tax revenues presently total about $42,000. Payroll taxes would be paid to the City General Fund on the earnings of approximately 1,700 of the 2,130 employees in the project. The remainder would be exempt from the tax because they would work for banks or insurance companies (which are not required to pay San Francisco payroll taxes), or for small, retail tenants with tax liabilities less than $500, or because they would be owners of businesses (also exempt). Based on an average wage of $27,200 for office workers in 1982, the payroll tax revenues from the project would be about $694,000, a net increase of about $652,000 above existing revenues./14/

Sales tax revenues are generated by both employee expenditures and retail sales on the site. The average office worker in downtown San Francisco is estimated to make taxable expenditures of $1,200 annually in the central business district/15/, and average retail sales are estimated to be about $120 per sq. ft. per year. Based on a tax rate of 1.25%, sales tax revenues generated on the project site are about $39,600 from employee expenditures and from retail sales per year. Estimated sales tax revenues generated for the City by project employee expenditures and retail sales on the site after project completion would be about $47,850, a net increase of about $8,300.

TABLE 7: PROJECTED DISTRIBUTION OF PROPERTY TAX REVENUES FROM PROJECT SITE IN 1985 (1982 dollars)

| Agency | 1981-1982 Ad Valorem Tax Rate | Percent | Revenues* |
|---|---|---|---|
| City and County of S.F. | $0.945 | 79.4 | $2,270,000 |
| S.F. School Districts | 0.167 | 14.0 | 402,000 |
| Bay Area Air Quality Management District | 0.002 | 0.2 | 5,000 |
| BART | 0.076 | 6.4 | 182,000 |
| TOTAL | $1.19 | 100.0 | $2,860,000 |

*Based on an assessed valuation of $240 million

SOURCES: San Francisco Controller's Office; Environmental Science Associates, Inc.

The project sponsors pay a gross receipts tax on their rental income from the existing buildings on the site. Total annual rental income is about $783,300. At a tax rate of 0.3%, annual gross receipts tax revenues from the existing buildings are about $2,350. Based on estimated total annual receipts from rents of about $18.7 million in 1982 dollars, tax revenues from rental income from the project (assuming full occupancy) would be about $56,100, a net increase of about $53,800./16/

General Fund revenues are also generated to the City by utility taxes on water, gas, electricity and telephone use. The site now generates about $1,700 annually from these taxes. Based on estimates of utility use, the project would generate about $81,000 from utility taxes, a net increase in revenue to the City of about $79,000./17/

General Fund revenues for the City and County of San Francisco from the project would total about $3,200,000, based on the tax rates and fees in effect in early 1982. General Fund revenues from the existing uses on the site totalled about $131,000 in 1981. The project would result in about a $3,100,000 net increase in General Fund revenues.

Costs to the City

Police, Fire and General Government

It is hard to predict with certainty how costs for given levels of services would differ between the project and the existing uses on the site, however most evidence indicates that overall costs per unit of service provided (per sq. ft., or per employee) to the new building would be lower than for the existing buildings, primarily because of improvements in fire and security protection systems in new construction.

In examining government services provided directly to office buildings, a San Francisco Planning and Urban Research Association (SPUR) study found that costs would grow proportionally more slowly than office space. The study found that if downtown office space increased by 60%, police costs would grow by 28% and fire protection costs by 1%./18/

Discussions with service agency personnel regarding capacities and abilities to provide services to the project tend to support the SPUR findings. In general, existing public facilities, equipment, and personnel are adequate to serve the project. While costs for servicing the site would increase because of the larger floor space and employment, costs per unit of service would not increase, and could decline. (See Appendix A, pp. 179-220.)

Muni

The City's General Fund provides a subsidy to the Municipal Railway's operating budget that covers the difference between Muni's costs and the revenue Muni receives from fares and from federal and state governments. This subsidy represents the cost of Muni to the City. The average Muni General

Fund deficit to the City per ride in 1981-82 is estimated by Muni at $0.39 per ride./19/ Assuming that about 29% of the employees who occupy the existing buildings on-site ride Muni to and from work, the existing General Fund subsidy to Muni required by commuting on-site employees is about $7,300 per year. Assuming the 1981-82 subsidy would remain the same in 1985 and that 29% of the project employees would ride Muni to work, the project would create the need for a General Fund subsidy to Muni of about $113,000 at 1982 costs, a net subsidy increase of about $106,000./20/

The project would help pay for the Muni deficit through revenue contributions to the General Fund. In the 1981-82 budget, 10% of discretionary General Fund revenues were allocated to Muni. If this percentage were to remain constant, the project would generate around $285,000 (in 1982 dollars) in General Fund Revenues to Muni in 1985. In April 1981, the San Francisco Board of Supervisors approved a proposal to levy a one-time fee of up to $5.00 per gross sq. ft. on new downtown office space./21/ The fee plan has been challenged in court; if it were to go into effect as proposed, the project could generate about $2,608,000 for the one-time Muni fee.

On February 1, 1982 the Board of Supervisors approved by resolution a measure declaring its intent to form a Core Area Transit Maintenance District, determining that a portion of public transit is provided Downtown in lieu of public parking places, and to impose upon real property within the area an annual payment for transit maintenance based on gross floor area. The project site is within the proposed district and would be subject to the legal assessment provisions finally adopted.

On July 12, 1982 the Board of Supervisors decided to postpone acting on the proposed transit maintenance assessment district until January 1983. This transit assessment district may no longer be applicable since both the Mayor and Board of Supervisors have withdrawn the proposal and the Mayor may intend to substitute an increase in business taxes. The business tax increase would be in the form of a ballot measure presented to the votors; implementation would depend on voter approval (and withstanding potential legal challenges). According to a memorandum entitled "Muni's Plans to Accommodate Downtown Growth" issued by Dean Macris, Director of Planning, (August 5, 1982), Muni

expects to be able to meet projected cumulative demand due to downtown office development without new City taxes.

BART

For each BART passenger trip in 1982 an average of $1.00 is paid by fares, and an additional $1.12 in costs must be supported by some other revenue source./22/ Over 86% of this additional cost is supported by the special 1/2% transit sales tax. It is estimated that about 15% of the employees who occupy the existing buildings ride BART to work. The estimated annual costs to BART that are not covered by these riders' fares are about $11,000./23/ BART's revenues from the sales tax generated by existing employees and retail uses on site and BART's share of property tax revenue from the site total about $15,500 in 1981-82, resulting in a net subsidy to BART of about $4,500.

Assuming the 1982 deficit per rider would be the same in 1985 and that 15% of project employees would ride BART to work, the project would generate a deficit of about $167,000./24/ BART's revenues from sales and property taxes generated by the project would be about $197,000, resulting in a net subsidy to BART of about $30,000.

Cumulative Fiscal Considerations

Since 1979, five studies have been prepared which analyze fiscal effects of development in the City's of C-3-O Downtown Office District. The studies were prepared by: Recht, Hausrath and Associates, Sedway/Cooke, Gruen Gruen + Associates (GG+A), Arthur Anderson and Co., and David Jones, and are compared and discussed in the 101 Montgomery St. Final EIR./25/ The Gruen Gruen + Associates and Arthur Anderson studies were paid for by the San Francisco Chamber of Commerce. The Sedway/Cooke study was paid for by the City and County of San Francisco. The David Jones study was prepared under the auspices of San Franciscans for Reasonable Growth. The Recht Hausrath & Associates study was paid for by Environmental Science Associates under contract to the project sponsor for the 101 Montgomery St. Building and reviewed by the Department of City Planning. These studies differ in various ways: in the questions they ask, the data sources they use, the methodologies

TABLE 8: SUMMARY OF RECENT STUDIES ON FISCAL IMPACT OF DOWNTOWN DEVELOPMENT

| STUDY, AUTHOR, DATE | PURPOSE OF STUDY | DATA SOURCES | STUDY METHODOLOGY | CONCLUSIONS |
|---|---|---|---|---|
| "Fiscal Concerns" in Downtown San Francisco Conservation and Development Planning Program, Phase I Study, Sedway/Cooke, et al., October 1979, pp. 56-59 | To qualitatively assess the likely fiscal impact of new development in the C-3 area under Proposition O. | SPUR STUDY (1975) | SPUR cost/revenue estimates for downtown in 1973 and for projected growth 1974-1990 were assumed. Proposition 13's effect on revenues and the possible need for increased transportation infrastructure were considered. Generalized conclusions about fiscal impact of new development were drawn. | 1) After Proposition 13, "costs may exceed revenues in the downtown by as much as 25%."<br>2) "[N]ew downtown development will not solve the city's growing fiscal problem; without new revenue sources, development will make it worse in the long run." |
| Downtown Highrise District Cost Revenue Study, Arthur Andersen & Co., November 1980 | To quantify for 1976-77 (pre-Prop.13) and 1978-79 (post-Prop. 13) how much revenue the C-3-O area generated and how much it costs to provide city services to the area. | Data compiled from city records and through conversations with city officials. | Only revenues generated within the C-3-O and costs of providing services to the C-3-O counted. "The principle guiding the study methodology was to calculate the amount of revenue that San Francisco would lose and the costs that could be reduced if the Downtown Highrise District were a separate city." | The C-3-O generated $56.79 million in 1976-77, or 61% more than the cost of city services to the area. In 1978-79, revenues were $53.29 million, or 48% greater than costs. |
| "Fiscal Considerations" Appendix C, 101 Montgomery Street FEIR, Recht Hausrath & Associates, January 1981. | Generalize conclusions about how post-Proposition 13 development downtown is likely to change the City's fiscal health from what it would be without new development. | SPUR Study, city records and conversations with city officials. | Under alternative assumptions about the cost/revenue balance in existing buildings and in new buildings, the fiscal impact over time of new development was compared to that of no new development. | "[A]n on-going process of new development would improve the City's fiscal situation. This beneficial impact would cease if new development were halted. This conclusion is tentative due to uncertainties about increased Muni costs." |
| Downtown Highrise District Cost/Revenue Study, David Jones, February 1981. | To quantify for 1978-79 the revenues generated by businesses in the C-3-O and the service costs imposed on the city and BART by the C-3-O. | Arthur Andersen study. | The Jones study differs from the Andersen study primarily as follows:<br>1) Costs of BART (but not revenues to BART) are included;<br>2) Only revenues paid by businesses and building owners are considered;<br>3) Muni deficit is computed differently;<br>4) Most costs estimated as percentage of revenues rather than actual service demand in the C-3-O. | The C-3-O imposed costs of $94.4 million on San Francisco and BART, or 125% more than the revenues the area's businesses and building owners generated to San Francisco. |
| Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, Gruen Gruen + Associates, March 1981 | To quantitatively estimate City revenues from the C-3-O and costs of serving the C-3-O in 1998, assuming the addition of 30 million square feet of building space in the C-3-O between 1981 and 1998. | Arthur Andersen study; data compiled from city records and through conversations with City officials. | "Only direct effects are considered." Costs are only measured for services "provided within the physical limits of the C-3-O district" and revenues are limited to "taxes on buildings within the district and the activities that take place within those buildings." Assumes the Arthur Andersen study is accurate and builds upon it. | In 1980, revenues from the 39 million square feet of building space in C-3-O were 1.66 times as large as costs. In 1998, after completion of the 30 million square feet of new space, revenues from the entire 69 million sq. ft. of C-3-O building space would increase to 1.92 times as large as costs. |

SOURCE: Recht, Hausrath and Associates

they employ, and the conclusions they draw. Table 8, p. 99, compares the purpose, study methodology, and conclusions of the five studies.

The project would probably result in an initial fiscal benefit. However, since revenues to the City would probably increase at a slower rate than costs, due to Proposition 13 limitations on property tax increases, cumulative costs of providing services to currently proposed and approved development could eventually be higher than revenues provided. This would be the case only if no new revenue sources were found, the rate of new development were to decline, and the proposed development were not resold at some time.

Proposition 13 limits the amount of increased assessed valuation on property, in the years in which the property is not sold, to 2% annually. When a property is resold, it can be reassessed based on its market value. As private homes change ownership more often than commercial or office property, the property tax revenues from the residential portion of the project would increase at a faster rate than the property taxes from the other uses.

NOTES - Employment, Housing and Fiscal Factors

/1/ Campeau Corporation California, "Bush St. Relocation Information," written communication, December, 1981.

/2/ December, 1981. Projections are based on the Bay Area Input-Output Model from Cooperative Extension Service, University of California, Berkeley, San Francisco Bay Area Input-Output Model 1967-1974, July 1978. A multiplier of 1.18 was used for FIRE and 1.55 for construction.

/3/ Association of Bay Area Governments (ABAG) and California Employment Development Department (EDD) data indicate that about 60% of the growth in San Francisco employment between 1972 and 1978 was in offices. ABAG projects that employment in San Francisco will increase 41,400 between 1980 and 1985, or an average of 8,300 per year. Sixty percent of that, or 5,000 jobs, are expected to be in offices. Assuming 250 gross sq. ft. of office space per employee, office employment growth would require an additional 1.25 million sq. ft. of office space each year. (Association of Bay Area Governments and Bay Area Council, San Francisco Bay Area Economic Profile, December 1979, pp. 40-43; California Employment Development Department, Wage and Salary Employment, By Industry, San Francisco City and County, 1972-1978.)

/4/ San Francisco Examiner, "Effects of S.F. Office Space Squeeze," January 18, 1981, report on a real estate conference sponsored by Coldwell Banker.

/5/ ABAG, April 1981, Bay Area Office Growth, Working Papers on the Region's Economy, Number One, p. 28.

/6/ A complete list of projects included in this analysis is available for public review at the Office of Environmental Review, 450 McAllister St., San Francisco, California.

/7/ Mayor's Office of Housing and Community Development, Citywide Affordable Housing Program, January 22, 1982.

$$\frac{\text{Gross sq. ft. of office space}}{\text{250 sq. ft. per employee}} \times \frac{40\%}{1.8} = \text{Number of housing units required}$$

Gross sq. ft. of office space = 16.1 million.

40% - percentage of downtown workers who would desire to live in San Francisco
1.8 = workers per household.

14,300 households generated by 9.8 million gross sq. ft. of office space using the OHPP formula.

/8/ Housing demand was calculated using the formula provided by Guiding Downtown Development, Department of City Planning, May, 1981:

$$= \frac{\text{521,805 gross sq. ft. office space}}{\text{250 gross sq. ft. per employee}} \times \frac{0.40 \text{ employees live in S.F.}}{\text{1.8 working adults per unit}} = 464 \text{ units}$$

/9/ San Franscisco Board of Realtors, October 5, 1981, "Multiple Sales Service" This information includes all homes sold from February 11, 1981 to October 1, 1981.

/10/ "Office/Housing Production Program", Department of City Planning, January 22, 1982.

/11/ 101 Montgomery Street FEIR, EE80.26, Certified May 7, 1981, Appendix C.

/12/ "Feasibility of Performing a Housing Affordability Analysis", prepared under contract to E.S.A. by Questor Associates (June 15, 1982).

/13/ Gary Mason, (former) Manager Commercial Real Estate, Campeau Corporation California, written communication, November 17, 1981.

/14/ Downtown office workers earn about $27,200 annually, based on average annual earnings of $16,300 for downtown office workers in 1974 (Spur, op cit) Data are inflated by about 67%, the national average percentage increase in weekly earnings of FIRE employees between 1974 and the end of 1980 (U.S. Bureau of Labor Statistics Monthly Labor Review, January, 1981).

/15/ Taxable expenditures within the central business district per office worker were $715 per year in 1974 (SPUR, op cit). Between 1974 and December 1981, average weekly earnings of finance, insurance, real estate and service workers rose nationally about 67 percent: resulting in average taxable expenditures of about $1,200 per year (1.67 X $715 = $1194).

/16/ Gary Mason, op cit.

/17/ Utility user's tax revenues were calculated as follows, using 1982 utility rates:

Water: 181,000 cu. ft. X $0.01449/cu. ft. X 0.05 tax = $131
Gas: 540,000 therms X $0.495/therm X 0.05 tax = $13,000
Electricity: 9.1 million kWh X $0.0707/kWh X 0.05 tax = $32,000
Telephone: 519,000 GSF X $1.40/GSF X 0.05 tax = $36,000
TOTAL: $81,000

/18/ SPUR op cit pp. 201-202, 211, 214.

/19/ Bruce Bernard, Muni Chief Accountant, phone conversation, June 16, 1982. Based on 1981-82 Muni net operating cost of $142,139,000, and net revenues of $87,833,000. Assuming the 1979 revenue passenger number of 139 million would be applicable in 1981, the average general fund deficit per ride would be $0.39. However, there has not been any update of the ridership number since 1979, and, the deficit per ride of $0.39 is an estimate.

/20/ The transportation modal split is taken from the Office of Environmental Review, "Guidelines for Environmental Evaluation - Transportation Impacts", October 1980. Assuming 260 work days per year, two rides per day and absenteeism of 10% (holidays, vacations, sick days), each worker will ride an estimated 468 times per year. Therefore, the cost is:

*(138 workers X 29% ride Muni X $0.39 deficit per rider X 468 rides per year = $7,300 existing deficit.)

*(2,130 workers x 29% ride Muni x 468 rides per year x $0.39 deficit per ride = $112,743 deficit with the project.)

/21/ San Francisco Ordinance No. 224-81, approved by the Board of Supervisors on April 20, 1981.

/22/ Ward Belding, Senior Economic Analyst, BART, telephone communication, June 16, 1982.

/23/ 138 workers x 15% ride BART x 468 rides per year x $1.12 cost per ride = $11,000 deficit.

/24/ 2,130 workers x 15% ride BART x 468 rides per year x $1.12 cost per ride = $167,000 deficit.

/25/ 101 Montgomery St. Final EIR (EE 80.26, Certified May 7, 1981, pp. 189-199). This document is available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister, 5th Floor, San Francisco, CA.

## E. TRANSPORTATION, CIRCULATION AND PARKING

### DEMOLITION, EXCAVATION, AND CONSTRUCTION

During the estimated 24-month construction period, transportation impacts would result from truck movements to and from the site during demolition, excavation and construction activity. Demolition would require about two months and would generate an average of 11 truck movements per hour, in or out of the site, between 9:00 a.m. and 4:00 p.m./1/ Excavation is expected to require two months and would generate an average of 19 truck movements per hour, in or out of the site between 9:00 a.m. and 4:00 p.m. Trucks would follow haul routes approved by the Department of Public Works to a peninsula disposal site. Construction would require about 20 months and would generate approximately 1,400 truck trips (an average of one truck movement per hour). During the entire 24-month construction period, truck access to the site would be from Bush St.; the parking lane on Bush St. in front of the site would be closed to provide a pedestrian detour. Increased temporary parking demand for construction workers' vehicles, and localized intersection impacts from construction worker traffic, would occur in proportion to the number of workers on site using automobiles.

The transportation impact of construction truck traffic would be a slight lessening of the capacities of access streets and haul routes due to the slower movements and larger turning radii of the trucks. Any truck traffic from 7:00 a.m. to 9:00 a.m. or from 4:00 p.m. to 6:00 p.m. would conflict with peak-hour traffic, particularly at freeway access points. Closure of the parking lane on Bush St. would reduce mid-block capacity during morning and evening peak hours as the parking lane would not be available for use as a traffic lane during the a.m. peak period, as it currently is. However, as the parking lane closure would not extend east past Trinity St., the peak hour right turn lane would not be affected; thus, intersection capacity would not be affected. Lane blockage on Bush St. by queued trucks, if it should occur during mid-day hours, would reduce street capacity by about 50%.

Currently, 101 Montgomery St. is under construction across Trinity St. from the project site and Crocker Plaza is nearing completion on the next block south of the project site. Two other buildings are proposed nearby. The Russ Tower, to be located at 350 Bush St. across the street from the project, and the 466 Bush St. building, to be located one block west of the project. The latter could be expected to be under construction during approximately the same time as the project. Concurrent construction activities at the project site and these nearby sites could disrupt traffic and pedestrian flows through multiple lane closures, sidewalk closures and street excavation (if necessary for utility connections). The aggregate effect would be expected to be reduced by different construction schedules, as the projects would be at different stages of construction. The steel frame is being erected for the 101 Montgomery St. building. By the time demolition could start at the project site, the adjacent project would not generate truck traffic in an amount sufficient to compound the effects of the project. Lane closures could overlap for the project site and the 101 Montgomery St. project, however, causing rerouting of pedestrians and traffic at the intersection of Montgomery and Bush Sts. If the Russ Tower addition were to begin construction when the project was under construction, significant restriction to travel on Bush St. could occur as a result of lane closure on both sides of the street. The 466 Bush St. building, while close by, is 'upstream' on Bush St. from the project site and thus would not directly impact the block (in terms of traffic flow) through lane closure. However, truck traffic from 466 Bush St. would travel on Bush St. in the project block and would add to impacts caused by project truck traffic if construction were to proceed concurrently with that of the project.

TRAVEL DEMAND ANALYSIS

An estimate of the amount of travel associated with the proposed project has been forecast through an aggregate travel demand modeling process using a generation/distribution/assignment model in which the project is treated as an attractor/generator of work and non-work related travel in proportion to the number of square feet of net new office and retail space and the number of dwelling units (see Appendix E, p. 252-273, for further discussion). Travel

is distributed to available modes using modal split data specified by the Department of City Planning (see Table E-3, p. 259, in Appendix E)./2/

The travel from the office portion of the project has been assumed to occur at the rate of 17.5 total (57% work and 43% non-work) person trip ends (pte) per 1,000 net sq. ft. of new office space. Travel from the retail portion of the project has been assumed to occur at 100 total pte/1,000 gross sq. ft. of new retail space. Based on recent survey data, 45% of the retail travel has been assumed to be internal to the project site (i.e.-already counted as part of the office or residential travel)./3/ Travel from the residential portion of the project has been assumed to occur at the rate of nine pte per dwelling unit per day./4/ Existing office and retail space has been subtracted from proposed space to give new space. This has been done to avoid double counting the travel to uses currently on site. Total proposed office spaces of 521,800 gross square feet (GSF) less 17,670 GSF of existing office space gives 504,140 GSF of net new office space. Similarly, total proposed retail space of 10,580 GSF less 27,160 GSF of existing space (not including the Financial Center garage) gives a net negative 16,580 GSF of retail space. Accordingly, the project would generate approximately 6,650 person trip ends per weekday./5/ The peak hour of project generation was assumed to occur during the peak period of 4:00 to 6:00 p.m. on weekdays during which 20% of the daily (24-hour) office travel and 10% of the daily retail and residential travel were assumed to occur. The project would generate about 1,370 person trip ends during the p.m. peak hour.

A total of 17.4 million gross square feet of new office space is proposed approved or under construction in the City. Tables E-1 and E-2, pp. 253-56, in Appendix E, show the projects included in the cumulative analysis. Approximately 1.3 million gross square feet of existing office space would be replaced by proposed development, resulting in about 16.1 million gross square feet of net new office space. This growth would generate approximately 48,000 person trip ends during the weekday p.m. peak hour.

Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit.

Residential projects have not been included because residential travel in the downtown is generally in a direction opposite the commute direction during peak-hours and because the office trip generation rate and modal split distribution assume that housing would be available in the City. Thus, inclusion of residential projects would be double counting of project generated travel.

Peak-hour travel by mode for the project and other office developments is shown in Table 9. The modal assignments have been made assuming existing travel patterns and do not attempt to predict any modal shift (see Appendix E, p. 252-273, for further discussion). As the bridge and freeway system serving the City is currently near capacity during peak hours, the present population of persons traveling by single-occupant auto might be expected to change in the future. Much of the City-wide peak-hour increase might be expected to be accomodated by a shift from single-occupant automobile to ride sharing or public transit.

In this and other San Francisco EIRs, a land-use type of approach has been used to estimate employment and the resultant transportation impacts of both the proposed project and cumulative development. An alternate type of approach is to forecast travel demand based upon regional projections of employment share (employment trend approach)./6/ Appendix E, pp. 252-273, contains a discussion of the difference between the two approaches.

TRANSIT

The transit analysis (conducted using Department of City Planning Guidelines, October 1980), analyzes cumulative and project ridership based on existing capacity. As a "worst case", this analysis assumes no expansion in the transit system and the results are not dependent on increased City/State/Federal funding. If existing City/State/Federal funding were to decrease, operating conditions on the Muni and other carriers could be expected to deteriorate. Conversely, if funding were to increase over existing levels, operating conditions would be expected to improve. The estimated ridership, for the 16.1 million gross square feet of net new cumulative office development and for the project, and load factors based upon

existing capacity are shown in Table 9 . As all of the transit agencies have five-year plans for improving service, load factors based upon capacity proposed to occur in the current five-year plan cycle (1982-1987) for each transit agency are also shown in Table 9. (Capacity refers to "recommended maximum" capacity as used by each transit agency and is shown in Table E-4, p. 261).

TABLE 9: PROJECTED* PEAK-HOUR PERSON-TRIPS BY TRAVEL MODE

| Modal Type | Projects** Under Construction | Approved Projects** | Projects Under Formal Review | 333 Bush Project | Total |
|---|---|---|---|---|---|
| Automobile | 6,980 | 4,600 | 3,180 | 470 | 15,230 |
| Muni | 5,480 | 3,620 | 2,510 | 390 | 12,000 |
| BART | 3,700 | 2,440 | 1,700 | 250 | 8,090 |
| A/C | 1,720 | 1,120 | 760 | 120 | 3,720 |
| SamTrans | 250 | 170 | 110 | 20 | 550 |
| SPRR | 940 | 620 | 430 | 60 | 2,050 |
| GGT | 820 | 540 | 380 | 50 | 1,790 |
| Ferry | 180 | 110 | 80 | 10 | 380 |
| Other | 1,480 | 1,220 | 1,490 | - | 4,190 |
| | 21,550 | 14,440 | 10,640 | 1,370 | 48,000 |

* Projected based upon distribution shown in Table E-3, Appendix E, p. 259.
** Individual projects are listed in Table E-1, Appendix E, p. 253. The 333 Bush St. project has been separated here from the projects under Formal Review totals.

The Muni lines with stops within 2,000 ft. of the site are expected to carry about 37,000 outbound p.m. peak hour trips./7/ The project would generate approximately 390 p.m. peak-hour Muni trips. Project-generated riders during the p.m. peak hour would be about 3.3% of the cumulative development demand (see Table 10, p. 109). Line by line Muni loading projections are shown in Appendix E, Table E-5, p. 263.

The addition of ridership from the projected 16.1 million gross square feet of net new cumulative office development would cause most Muni lines affected by the project to operate over capacity if no additional capacity were added during the p.m. peak hour. This would also be the case for the BART (transbay), Southern Pacific and SamTrans. As the cumulative demand increases, the length of time of peak loading will increase, spreading peak-of-the-peak conditions over time. As some lines operate only during heavy demand periods (for example, express service for one to two hours during peak periods), there may not be additional capacity available to allow spreading over time without adding more runs. (Additional runs may not require more vehicles as the additional runs would be using the same vehicles used for express lines over an extended period of time. Additional runs would cause increases in operating and maintenance costs.)

Assuming that existing funding continues and proposed five-year plan expansion occurs, the future load factors on the transit carriers would be as shown in Table 9, p. 107. Muni is proposing to increase systemwide capacity by 19%. Assuming the increase is to be provided uniformly, average loading including ridership from the cumulative demand would be over capacity. If Muni does not apply the increase uniformly but rather gives a greater increase in capacity on the lines serving the downtown and a lower increase in capacity on other lines, the load factors would be lower than those shown for Muni in Table 7, p. 95. BART projects a peak hour capacity of 16,500 seats transbay (eastbound) and 11,000 seats westbay (westbound). Recommended maximum capacity would be 24,750 and 16,500 respectively. Average loadings including ridership from the projected 16.1 million gross square feet of net new cumulative office development would not be over capacity with the anticipated five-year plan capacity. AC Transit does not have any increases proposed for its transbay service and would therefore be operating at 99% of its recommended maximum capacity with the cumulative demand. SamTrans proposes to have a capacity of between 4,800 and 5,000 seats per hour on its San Francisco routes. Recommended maximum capacity would be 6,250 riders. Average future loadings on SamTrans would be under seated capacity when the anticipated capacity becomes available. Southern Pacific/CalTrans does not have any proposals to increase seated capacity; however, station improvements including additional parking are proposed. CalTrans proposes to operate three trains daily over the San Francisco Beltline Railroad from the Southern Pacific

TABLE 10: AFTERNOON PEAK HOUR OUTBOUND TRANSIT RIDERSHIP

| | RIDERSHIP | | | LOAD FACTOR (Existing Capacity)* | | | LOAD FACTOR (Proposed Capactiy)** | |
|---|---|---|---|---|---|---|---|---|
| Agency | Existing | Existing + Cumulative (without Project) | Existing + Cumulative (with Project | Existing | Existing + Cumulative | Existing + Cumulative + Project | Existing Cumulative | Existing + Cumulative + Project |
| Muni*** | 25, 330 | 36,650 | 37,040 | 0.91 | 1.31 | 1.33 | 1.10 | 1.11 |
| BART | | | | | | | | |
| Transbay | 13,600 | 18,760 | 18,920 | 0.90 | 1.24 | 1.25 | 0.76 | 0.76 |
| Westbay | 6,445 | 9,130 | 9,220 | 0.61 | 0.87 | 0.88 | 0.55 | 0.56 |
| A-C Transit | 9,560 | 13,160 | 13,280 | 0.72 | 0.99 | 0.99 | 0.99 | 0.99 |
| SamTrans | 1,700 | 2,230 | 2,250 | 0.78 | 1.02 | 1.03 | 0.36 | 0.36 |
| SPRR | 5,180 | 7,170 | 7,230 | 0.78 | 1.09 | 1.10 | 1.09 | 1.10 |
| Golden Gate | | | | | | | | |
| Motor Coach | 4,510 | 6,250 | 6,300 | 0.66 | 0.91 | 0.92 | 0.73 | 0.73 |
| Ferry | 800 | 1,170 | 1,180 | 0.39 | 0.56 | 0.57 | 0.33 | 0.33 |

* Load factor based upon existing (recommended) maximum capacity. A load factor of 1.00 is equivalent to 100% of recommended seated and standing capacity being used. Recommended maximum capacity is less than "crush" loading that occur occasionally.
** Load factor based upon proposed capacity as specified by each agency's Five-Year Plan (see Appendix E, p. 252 ).
*** 1982 Muni ridership is approximate based on a compilation of Muni ridership by the Department of City Planning and Office of Environmental Review as supplemented by ESA.

SOURCE: Environmental Science Associates, Inc.

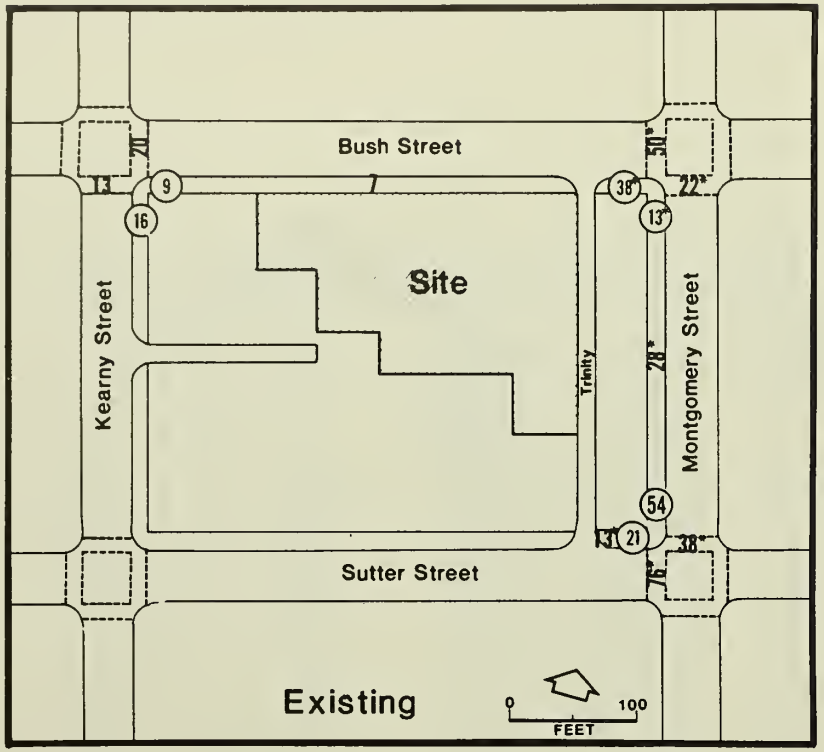
terminal at Townsend St. to the Ferry Building. This would not increase capacity on the Southern Pacific system but may affect loading on Muni lines serving the train terminal at Fourth and Townsend Sts. Southern Pacific would therefore operate in excess of its recommended maximum capacity with the cumulative demand. Golden Gate Transit is proposing to increase peak period (6-10 a.m.) motor coach capacity by 25% over existing levels and to increase ferry service by addition of another Larkspur Ferry (an increase of about 70% over existing service.) Average future loadings (including the cumulative demand) on Golden Gate Transit would not exceed capacity when the proposed additions become available./8/

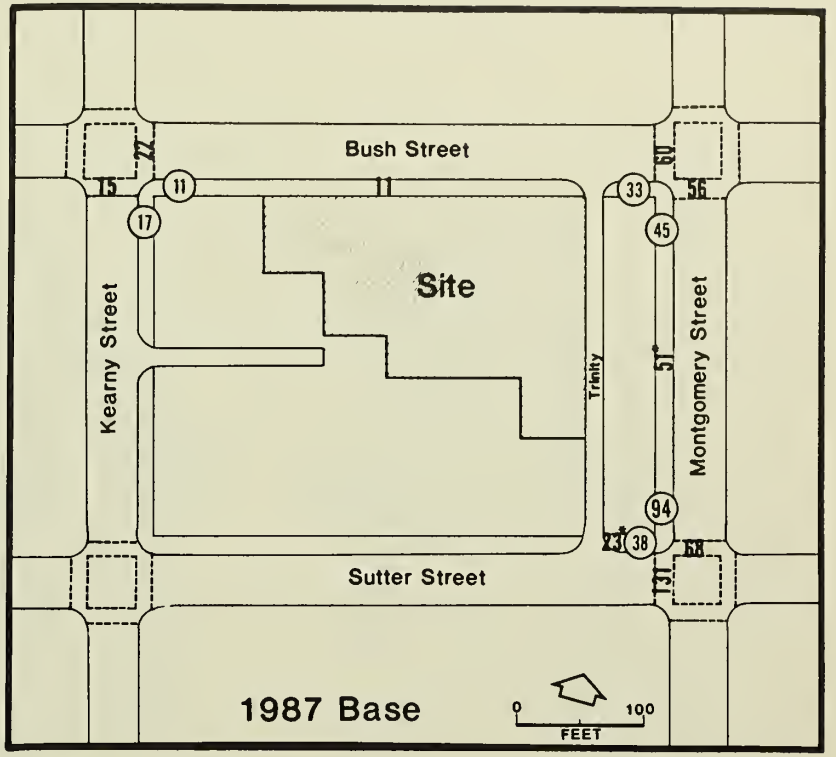
PEDESTRIAN MOVEMENT

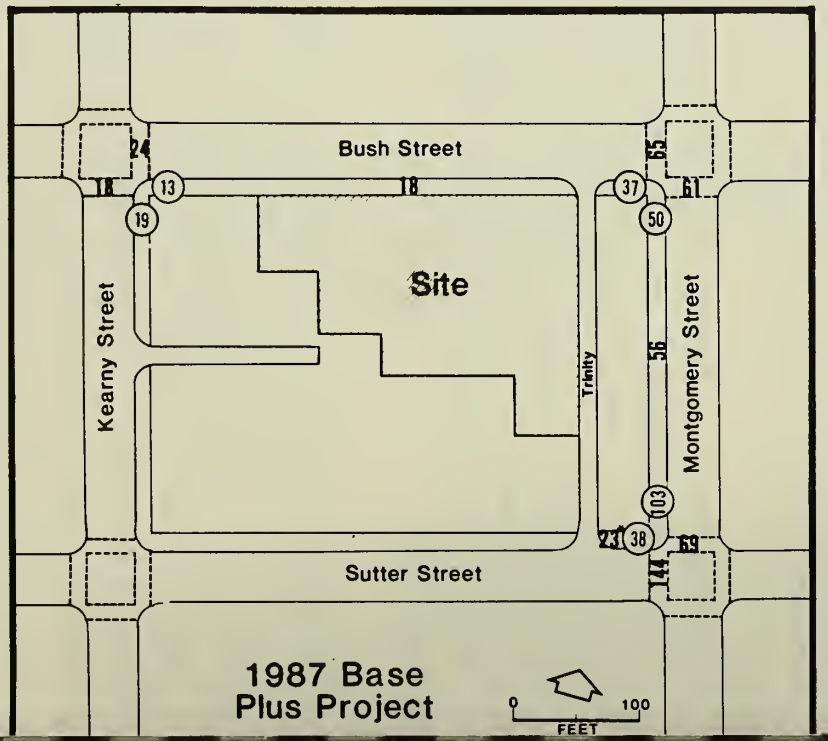
Figure 25 shows pedestrian volumes on the sidewalks and crosswalks in the project vicinity for three conditions: (1) existing volumes; (2) 1987 cumulative volumes; and, (3) 1987 cumulative-plus-project-generated volumes. Volumes for each sidewalk segment or crosswalk are expressed as a percent of the total available capacity (100%). Table E-8, p. 265, describes the condition of pedestrian flows for different volumes, e.g. open, impeded, crowded, jammed, which correspond to the percent of available capacity used.

The existing plus cumulative condition includes increases from projected cumulative development including buildings proposed or under construction at 466 Bush St., 453 Grant St., 582 Bush St., 101 Montgomery St., 250 Montgomery St., 222 Kearny St., 350 Bush St. (Russ Tower), 456 Montgomery St., 550 Kearny St, 580 California St., 555 Montgomery St. (Bank of Canton), Sloane, Crocker Headquarter, and Montgomery/Washington buildings.

Estimated pedestrian travel to the Financial Center Garage has been factored out of the existing plus cumulative-plus-project conditions, as the project proposes to remove the garage. The project pedestrian p.m. peak travel has been assumed to be the p.m. peak hour travel (1370 pte) less the number of people that would use the 44 proposed non-residential parking spaces in the building (about 60 pte) less the people currently using the Financial




**Legend**

---------- Crosswalks

○ Reservoirs

Numbers indicate percent of capacity

* Pre-Construction of 101 Montgomery Condition

FIGURE 25:
P.M. Peak 15 Minute
Pedestrian Volumes as a Percent of Capacity of Sidewalk System

SOURCE: TJKM Transportation Consultants

Center Garage (approximately 80 pte), or 1,230 person trip ends per hour with 410 occurring in the peak p.m. 15 minute period. The primary pedestrian access to the project is proposed to be on Bush St. through four entrances, one for office and commercial, one for residential use, and two only for access to the Terrace Level and plazas.

At present noontime, the Bush St. sidewalk in front of the site has pedestrian volumes that occupy 15% of the available capacity (impeded); in the p. m. peak hour existing volumes are 7% (unimpeded); in 1987 with cumulative development 11% of available capacity would be used (unimpeded); in 1987, cumulative development plus the project would use a total of 18% (impeded). The Montgomery St. sidewalk, between Bush and Sutter Sts., presently has volumes that occupy 28% of the available capacity (impeded); in 1987 with cumulative development 51% of available capacity would be used (constrained); in 1987, cumulative development plus the project would use a total of 56% (crowded).

The Sutter St. sidewalk near the intersection of Montgomery and Sutter Sts. would be affected by the project's pedestrian travel. At present, this sidewalk segment has pedestrian volumes that occupy 13% of available capacity (impeded); in 1987 with cumulative development 23% of available capacity would be used; in 1987, with cumulative development plus the project, volume would remain at 23% of available capacity (impeded). Project pedestrian volumes would account for approximately 70% of the cumulative development increase on the Bush St. sidewalk, 20% of the increase on the Montgomery St. sidewalk and less than 10% of the increase on the Sutter St. sidewalk.

The crosswalks at the intersection of Bush and Kearny Sts., west of the site, presently have impeded conditions; cumulative development in 1987, and cumulative development plus the project, would cause impeded conditions to persist, but the flow regimen would not worsen. The crosswalk across Bush at Kearny St. has present volumes that occupy 20% of available capacity (impeded); in 1987, 22% of available capacity would be used (impeded); 1987 cumulative plus project pedestrian volumes would use 24% of available capacity (impeded). At present, the crosswalk across Kearny at Bush St. has pedestrian volumes that occupy 13% of available capacity (impeded); in 1987, 15% of available capacity would be used (impeded); 1987 cumulative plus project pedestrian volumes would increase use to 18% of capacity (impeded).

The crosswalks at the intersection of Bush and Montgomery Sts., east of the site, presently operate in impeded (across Montgomery) and constrained (across Bush) conditions. Cumulative development in 1987, and cumulative development plus the project, would cause conditions at both of these crossings to worsen to crowded. At present, the crosswalk across Bush at Montgomery St. has pedestrian volumes that occupy 50% of available capacity (constrained); in 1987, 60% of available capacity would be used (crowded); 1987 cumulative plus project pedestrian volumes would use 65% of available capacity (crowded). The crosswalk across Montgomery at Bush St. presently has pedestrian volumes that occupy 22% of available capacity (impeded); in 1987, 56% of available capacity would be used (constrained); 1987 cumulative plus project pedestrian volumes would use 61% of available capacity (crowded).

Crosswalks at the intersection of Sutter and Montgomery Sts., southeast of the site, presently operate under constrained (across Montgomery) and crowded (across Sutter) conditions. Cumulative development in 1987, and cumulative development plus the project, would cause conditions at both of these crossings to worsen: the crossing of Montgomery St. would become crowded; the crossing of Sutter St. would become jammed. At present, the crosswalk across Montgomery at Sutter St. has pedestrian volumes that occupy 38% of available capacity (constrained); in 1987, 68% of available capacity would be used (crowded); 1987 cumulative plus project pedestrian volumes would use 69% of available capacity (crowded). The crosswalk across Sutter at Montgomery St. presently has pedestrian volumes that occupy 76% of available capacity (crowded); in 1987, volumes would be 131% of available capacity, or actually exceed capacity by 31% (jammed); 1987 cumulative plus project pedestrian volumes would be 144% of available capacity, or exceed available capacity by 44% (jammed), with the project contributing 13% of this excess.

Trinity St. has been designated for improvement as a pedestrian/service street with emphasis to be given to improving the pedestrian environment but not closing it entirely to truck traffic /9/. To achieve this, as a condition of approval for the 101 Montgomery St. building, the developers of that project will provide new paving for Trinity St. The project would have retail access at ground level from Trinity St.; the 101 Montgomery St. building will have a ground level pedestrian entrance on Trinity St. As Trinity St. is currently closed due to construction, accurate estimates of pedestrian travel are not available.

TRAFFIC

Traffic impacts for the project were analyzed at freeway access ramps serving the downtown and at the intersections on the project block. For estimation of project-generated traffic volume increases at freeway access points, conventional techniques for estimating traffic generation were used. Traffic was based on numbers of on-site employees, visitors and residents; it was assumed that as long as parking would be available within walking distance, most drivers would continue to drive to work. Analysis of the streets which serve the project as feeders to or from freeway ramps (Mission, Beale, Washington, Clay and Fourth Sts.) was assumed to represent the "worst case" or greatest traffic impacts. Impacts from the project on other streets would be less as project traffic on them would be less concentrated. For local streets surrounding the project site, traffic volume increases were assumed to be proportional to the capacity of the proposed on-site garage. It was assumed that routes of drivers going to other garages would be sufficiently dispersed to have a negligible effect on volumes on streets adjacent to the project.

The project is proposed to have about 100 off-street parking spaces of which 56 would be for residents of the 56 dwelling units proposed on site, leaving 44 spaces available for other parking through a valet system. The effects of removing the existing 360 space Financial Center Garage have been calculated as part of the existing-plus-cumulative-plus-project conditions shown in Table 11, p. 115. The project impact at the intersections closest to the project site would be a result of service vehicle traffic and traffic using the project parking facility assuming a worst-case condition of all 44 spaces emptying onto the streets during the p.m. peak hour.

Traffic from cumulative development would cause the level of service to deteriorate from Level of Service D to F at the intersections of Mission St. at Beale St. and at Main St. Addition of the cumulative demand at the intersections of Clay and Front Sts. and Washington and Battery Sts. would shift operations from Level of Service A and B, respectively, to C, and would shift operations from Level of Service C to D at the intersection of Fourth and Harrison Sts. The impact of the project would be an imperceptible lessening of the level of service of traffic operation on the street system relative to the existing-plus-cumulative conditions.

Removal of an automobile destination (the Financial Center Garage) from the site, would more than offset the increase from project and cumulative development traffic in the vicinity, allowing the intersections of Bush and Kearny Sts. and Bush and Montgomery Sts. to maintain operation equivalent to existing conditions (see Table 11). Increases in pedestrian activity would cause some delay to turning vehicles in the project vicinity. An effect of increased congestion at the intersections of Mission St. at Beale and Main Sts. would be a redistribution of travel patterns to less traveled routes and, potentially, a shift from automobile to transit or paratransit use.

TABLE 11: PROJECTED PEAK-HOUR INTERSECTION VOLUME-TO-CAPACITY RATIO NEAR THE PROJECT SITE

| Intersection | Existing V/C | LOS* | Existing + Cumulative** V/C | LOS* | Existing + Cumulative** + Project V/C | LOS* |
|---|---|---|---|---|---|---|
| Montgomery and Bush (pm) | 0.87 | D | 0.88 | D | 0.86 | D |
| Kearny and Bush (pm) | 0.63 | B | 0.63 | B | 0.63 | B |
| Kearny and Sutter (pm) | 0.52 | A | 0.52 | A | 0.52 | A |
| Montgomery and Sutter (pm) | 0.73 | C | 0.74 | C | 0.72 | C |
| Fourth and Harrison (pm) | 0.79 | C | 0.89 | D | 0.89 | D |
| Mission and Beale (pm) | 0.84 | D | 1.58 | F | 1.60 | F |
| Clay and Front (pm) | 0.51 | A | 0.73 | C | 0.74 | C |
| Mission and Main (pm) | 0.86 | D | 1.30 | F | 1.32 | F |
| Washington and Battery (am) | 0.62 | B | 0.79 | C | 0.80 | C |

* LOS - Level of Service. See Appendix E, Table E-6, p. 264, for definition of Levels of Service. Based upon manual intersection counts on October 29, and November 2-4, 1981, all week days.

** The 16.1 million gross square feet of net new cumulative office development is listed in Appendix E, Tables E-1 and E-2, pp. 253-56.

SOURCE: TJKM, Transportation Consultants, Environmental Science Associates, Inc.

PARKING

The daily, project-generated parking demand is estimated to be 530 parking spaces. This demand was calculated based on the projected number of auto driver work and non-work trips. The average percentage of non-work trips for multi-tenanted buildings is estimated to be 43% as assumed in the travel demand analysis. The average length of stay for non-work trips is estimated to be two hours./10/

To estimate the work or long-term parking demand, all of the auto driver work trips were assumed to generate demand for one parking space per trip, or 490 spaces for the project, per day. The non-work or short-term parking demand was calculated by dividing the non-work auto driver trips by a turnover factor based upon average length of stay. (Turnover was calculated by dividing a 9-hour working day, 8:00 a.m. - 5:00 p.m. by the average length of stay of two hours to give a turnover factor of 4.5.) Thus the average short-term (non-work) parking demand was calculated to be 40 spaces per hour for the project.

The project would include 56 residential units. According to the City Planning Code, one off-street parking space per four dwelling units would be required in this C-3 district, or 14 spaces total for the residential portion of the project./11/ According to preliminary project plans, each residential unit would be allocated a parking space, a total of 56 spaces, leaving 44 spaces for short-term use. The total parking demand from the project would exceed the supply by 490 spaces. Short-term demand from the project would not exceed the supply (demand would be 40 spaces per hour and the project would provide 44).

The project would displace an existing 360-space parking facility. About 150 of the existing spaces in the Financial Center Garage are reserved, and 210 are available for daily long-term or short-term use. The facility supplies parking for uses in the vicinity in excess of existing parking demands generated from on-site uses. Thus, compared to the present, where available on-site parking parking exceeds site-generated demand, the proposed project would require 530 spaces hourly, displace 360 spaces, and provide about 100

spaces (valet parking). The total, combined net parking deficit on-site would be 790 spaces.

Within about 1,000 ft. of the project site are approximately 4,580 commercially available off-street parking spaces. About 630 of these spaces are located on sites of future construction, including the 360 on the project site. Average daytime occupancy in the unaffected spaces is approximately 93% with about 260 spaces open at any one time. Cumulative short-term parking demand from buildings proposed and under construction near the project is projected to be 140 spaces not including the diplaced Financial Center Garage users. Addition of the Financial Center Garage users would bring the demand to about 350 spaces (not including the 150 reserved spaces in the Financial Center Garage which are long-term). The net short-term parking deficit in the area within 1,000 feet of the project would be about 90 spaces (i.e. demand of 350 versus present availability of 260 within 1,000 ft.). This assumes the removal of off-street parking by proposed buildings. Other projects with unmet short-term parking demand would compete with the project for these available spaces.

Long-term parking demand for cumulative office development in the greater downtown area has been estimated to be about 15,600 spaces (including the project). The project would represent 3.1 percent of the total demand. Long-term parking demand has been assumed to be distributed over the greater downtown and South-of-Market areas rather than being concentrated near the proposed project location. Long-term parking demand is typically work (employee) related and is more likely to be influenced by cost rather than by location (see Appendix E, pp. 252-273). A recent survey by the Department of City Planning shows that there are about 37,000 off-street parking spaces in the C-3 district and an additional 6,500 spaces in the area bounded by The Embarcadero, Folsom, Eighth and Bryant Sts./12/ Based upon average occupancy, about 4,100 spaces are available on a daily basis. The cumulative demand for the whole downtown area would create a net deficit of 11,500 spaces. Parking demand has been based upon existing travel patterns and is not dependent upon the availability of parking spaces or the ability of the freeway and bridge system to carry the additional demand. Freeway and bridge capacity into downtown is essentially fixed at existing levels, as major construction would be required to add new capacity. Therefore, the net deficit of 11,500 spaces

does not mean that 11,500 autos would be driving on City streets in search of parking. Rather, the travel demand represented by the parking deficit would most likely shift to ride sharing or transit. Increased ride sharing would not only reduce parking demand but would also reduce traffic impacts from the "worst case" impacts shown in Table 11, p. 115.

The deficit may be less than this estimate as the survey did not inventory parking in the Civic Center area, the areas west of Eighth St., south of Bryant St. or north of Washington St. (all of which are included in the demand calculation). The survey did indicate that inside the study area about 6,000 parking spaces have been added since 1967 and approximately 1,400 are propoed to be added (exclusive of 4,845 parking spaces to be provided in Yerba Buena Center).

City policy, as stated in the Revisions to the Transportation Element of the Master Plan Regarding Parking, 1977, is to "encourage short-term use of existing parking facilities within and adjacent to the downtown core by converting all day commuter parking to short-term parking in areas of high demand or to car/van pool parking where short-term parking demands are low."/13/ Accordingly, approximately 14,000 existing off-street spaces in the C-3-O planning district could be converted to short-term-only parking, if the City enacted such legislation.

Imbalances in long-term parking demand and potential supply, given projected cumulative development and demand, would be expected to encourage the use of car pools and van pools, or the creation of satellite (intercept) parking facilities in outlying non-residential areas, with shuttle or expanded Muni service to the downtown area, or increased use of transit directly for commuters from San Francisco or suburban centers (East Bay, North Bay, Peninsula). Peninsula residents, for example, could find Southern Pacific commuter trains more attractive if they could get no closer to downtown by car than the train terminal at Fourth and Townsend Sts. All transit options would add riders on the regional and local transit system, particularly Muni.

TRUCK DELIVERIES AND LOADING

Table 12 shows total service vehicle travel and average hourly service vehicle demand based upon data published in Center City Circulation Program: Pedestrian Circulation and Goods Movement./14/ The building would generate approximately 116 service vehicle stops per day. Average hourly loading space needs are given in terms of spaces per hour per 10,000 gross sq. ft. of building space; average demand for the project would be 5.4 spaces per hour and peak hourly demand would be 6.9 spaces. The ten loading spaces proposed (three 35-ft. spaces; one 55-ft. space; and six delivery van spaces) would meet the average hourly and peak hour demand for loading space, based on the published demand data.

TABLE 12: ESTIMATED SERVICE VEHICLE TRAVEL* ATTRIBUTABLE TO THE PROJECT

| Use | Gross Square Feet (GSF) | Daily Stops/ 10,000 sq.ft. of GSF | Daily Stops | Spaces/Hour/ 10,000 sq.ft. of GSF | Average Spaces/ Hour |
|---|---|---|---|---|---|
| Office | 521,800 | 2.1 | 110 | 0.1 | 5.2 |
| Retail | 10,580 | 3.0 | 3 | 0.21 | 0.2 |
| Residential | 101,660 | 0.3 | 3 | 0.01 | 0.1 |
| | | | 116 | | 5.5 |

* Service vehicle travel has been included in total travel calculated for the project.

SOURCES: Environmental Science Associates, Inc.

The project is proposed to have service vehicle access on the highest subsurface level via a ramp from Bush St. Access to both levels of on-site vehicle parking is proposed to be from Bush St. via the same ramp as service vehicles would use to the loading docks.

City Planning Commission (CPC) Resolution 9286 would require a total of seven spaces for the uses in the project (five for office, one for retail and one for residential)./15/ These spaces would have to be of sufficient size to

handle standard single unit (SU) trucks and smaller vehicles. At least one of the spaces must be 55 ft. in length. The project is proposing to provide three 35-ft. spaces, one 55-ft. space and six van spaces (two for one for each of the remaining three required spaces, as allowed by the Planning Code). Analysis of the design of the loading/service area and the access ramps indicates that standard single unit trucks and smaller vehicles would be able to maneuver adequately in the space proposed. Tractor-trailer combinations, which are typically 55 ft. in length, would not be able to negotiate the ramp to the loading bays. Tractor-trailer deliveries, however, are expected to be infrequent and would be limited to moving vans and some deliveries of heavy office equipment and furniture. At these times on-street parking would be required.

The project would include direct access to the freight elevator from the loading docks for the residential and office floors and lobbies (see Figures 4, and 5, pp. 20-21). The retail uses fronting on Trinity St. and the retail use at the west end of the building fronting on Bush St. would not be accessible from the basement loading dock, and thus would require curbside loading. There are three, 30-minute metered loading zones on Bush St. near Trinity St. that could serve the retail uses fronting on Trinity St. At the west end of the project there are five, 30-minute metered loading zones on Bush St. The loading zones are reserved for commercial vehicles from 9 a.m. to 1 p.m. only. After 1 p.m. commercial vehicles would have to compete with other vehicles for the spaces. Curbside loading from Trinity St. would block vehicle traffic through the alley and impede pedestrian travel in the alley. Service vehicle use of Trinity St. would not conflict with the proposed designation of the alley as a pedestrian/service street.

The proposed curb cut would be the maximum 24 ft. recommended by CPC Resolution 9286, less than half the length of the existing curb cut serving the Financial Center Garage. The curb cut would be less than 30% of the project frontage, in compliance with CPC Resolution 9286. Vehicle-pedestrian conflicts at the sidewalk adjacent to the garage entrance would be reduced by approximately one-half because average vehicle arrivals and departures would be about one-half of those at present.

NOTES - Transportation, Circulation and Parking

/1/ The data for the length of the demolition, excavation, and construction periods are from Skidmore, Owings & Merrill, the project architects.

/2/ The regional distribution, office trip generation, trip purpose and peak hour percentage are from Attachement 1 of the Guidelines for Environmental Impact Review, Transportation Impacts Department of City Planning, October 1980 and the modal split assignment is from Attachment 2. Supplemented by survey data collected by Environmental Science Associates, Inc.

/3/ The survey of retail travel was conducted by Environmental Science Associates, Inc. at Embarcadero Center on Thursday June 17, 1982 between 10:00 a.m. and 4:00 p.m.

/4/ Residential trip generation is from Report on Trip End Generation Research Counts (Vol. 1-12) CalTrans District 4, 1966-1980. Retail trip generation is from Trip Generation, Institute of Transportation Engineers (ITE), 1979. Rates have been adjusted from vehicle trip ends to person trip ends based upon an assumed vehicle occupancy of 1.4 persons per vehicle.

/5/ 504,140 gross square feet of office space X 80% (efficiency) X 0.0175 person trip ends (pte) per day/net square foot + 56 dwelling units X 9 pte per day/dwelling unit - 16,610 gross square feet of retail space X 0.1 pte per day/gross square foot X 0.55 (primary retail trips) = 6,650 pte per day. (Efficiency converts gross square footage to net square footage)

/6/ The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in EIRs to give a balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each.

/7/ The Muni lines affected by the project are the 1, 1X, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 14, 14GL, 14X, 15, 17X, 21, 27, 30, 30X, 31, 31X, 38, 38L, 38AX, 38BX, 41, 42, 45, 66L, J, K, L, M, N, 71, and 80X.

/8/ Muni projections from Municipal Railway Rehabilitation and Replacement Plan; BART projections from Marty Birkenthal of BART on August 18, 1982; SamTrans projections from Gregorio Kipp of SamTrans on Augst 18, 1982; A-C Transit proposals from Ted Reynolds of AC Transit on August 18, 1982; Golden Gate Transit proposals from Alan Zahradnik of Golden Gate Transit on Auugust 19, 1982, Southern Pacific proposal from H. H. Cavanauch, Railroad Consultant with CalTrans, and from Jim Strong, Design Engineer with Southern Pacific, on August 26, 1982.

/9/ Guiding Downtown Development, Department of City Planning, May 1981, pps. D-15, D-16.

/10/ The parking characteristics data are from a federally-sponsored research document: Urban Travel Patterns for Hospitals, Universities, Office Buildings, and Capitols, Rept. No. 62, 1969, National Cooperative Highway Research Program (NCHRP)

/11/ Planning Code, City and County of San Francisco, 1979, Article 1.5, Section 151, p. 60.

/12/ Inventory of Off-Street Parking Spaces, San Francisco Department of City Planning, May 24, 1982.

/13/ Revisions to the Transportation Element of the Master Plan Regarding Parking, Resolution 7647, San Francisco Planning Commission, January 20, 1977.

/14/ Center City Circulation Program: Pedestrian Circulation and Goods Movement, Working Papers 1, 2, and 3 and Final Report, San Francisco Department of City Planning, 1980.

/15/ City and County of San Francisco, Exhibit A, Off-street Freight Loading and Vehicle Space Requirement and Guidelines, January, 1982, intended to amend Sections 152, 153, 154, and 155 of the Planning Code (intended to replace Planning Code, City and County of San Francisco, 1979, Article 1.5, Section 152, pg 61).

## F. AIR QUALITY

### CONSTRUCTION

Demolition, excavation, frame and building shell construction would affect local air quality, especially particulate (dust) concentrations, intermittently for about 12 months. In contrast to gaseous pollutants and small-size particulate from combustion, a large fraction of particulate from construction settles out of the atmosphere rapidly with increasing distance from the source and generally does not penetrate to the lungs. It has been estimated that the small-size (less than 30 microns in diameter) fraction of construction particulate, which may remain suspended indefinitely and is a health hazard, is generated at the average rate of 1.2 tons per acre per month of activity./1/ Without mitigation, this rate would result in worst-case 24-hour concentrations near the site that would exceed by several times the state standard of 100 ug/$m^3$. Dust would be reduced by about 50% by sprinkling unpaved areas with water. (See Mitigation Measures, pp. 140-151.)

The use of paints and other architectural coatings, and the use of asphalt for road paving, would generate hydrocarbon emissions (a precursor of ozone). Emissions from these activities are controlled by BAAQMD (Bay Area Quality Management District) Regulation 8, Rules 3 and 15, respectively.

OPERATION

Long-term air quality impacts associated with operation of the project would result primarily from increased vehicular emissions. Reductions in vehicle emissions caused by decreasing the number of on-site parking spaces from 360 to 100 would be more than offset by increased vehicular traffic generated by the project. Combustion of natural gas for space and water heating would also generate small amounts of pollutants (primarily nitrogen oxides) relative to those produced by traffic. Projected daily emissions of pollutants resulting in 1987 from all project-generated traffic throughout the air basin are shown in Table 13, p. 124 and compared with projected regional emissions. In 1987, the project would contribute about one-hundredth of a percent to the Bay Area's CO, HC, NOx, and TSP generation, and less than three hundredths of a percent of the Areas SOx generation.

Projections of worst-case (poor dispersion meteorology) roadside CO concentrations along several streets carrying project-generated traffic are shown in Table 13, p. 124. Table 13 includes 1982 and 1987 conditions (base, cumulative development and cumulative development with the project).

As Table 14, p. 125 shows, the 1987 base case CO concentrations would be less than 1982 concentrations because the projected effects of state and federal emission controls on new vehicles would more than offset emission increases generated by increased traffic volumes that would occur on some streets near the project. On Bush and Montgomery Sts., traffic volumes are projected to decrease contributing further to the decline in curbside CO concentrations. Adding the proposed project to 1987 cumulative development would increase the base case concentrations, although in all cases they would remain below existing concentrations. The largest increases due to the project (about two percent for one-hour and eight-hour concentrations) would occur on Bush St. (one hour) and Fourth St. (eight hour). No excesses of the applicable CO standards are projected on any street under any of the future scenarios.

TABLE 13: PROJECTED 1987 DAILY PROJECT AND CUMULATIVE BAY AREA EMISSIONS

| Emissions Generator | Pollutant Emissions (tons per day) CO | HC | NOx | SOx | TSP |
|---|---|---|---|---|---|
| Proposed Project* | 0.334 | 0.029 | 0.042 | 0.005 | 0.050 |
| Entire Bay Area AQMD (1982) | 2,880 | 615 | 598 | 192 | 498 |
| Entire Bay Area AQMD (1987)** | 2,340 | 515 | 543 | 182 | 536 |

*Emissions of CO, HC, and NOx include an assumed three minutes of idle time per trip. Idle emission factors are not available for SOx or TSP. Emissions of TSP include re-entrained dust from roadway surfaces.
**1987 projection based on Association of Bay Area Governments, Bay Area Air Quality Management District, and Metropolitan Transportation Commission, 1982 Bay Area Air Quality Plan, June 1982, p. E-3.

SOURCES: Environmental Science Associates, Inc., based on traffic data from TJKM, Transportation Consultants, and emissions data from BAAQMD.

In addition to CO, project-related and cumulative vehicle emissions would add to local and regional accumulations of HC, NOx, and to a lesser extent of SOx and TSP, during adverse meteorological conditions such as thermal inversions and low wind speeds. The 1982 Bay Area Air Quality Plan predicts that ozone will continue to be a regional problem in the future, that CO and TSP will continue to be problems on a local scale, and that certain pollution control strategies to reduce emissions are necessary to attain and maintain the standards for those pollutants as required by law./2/ Cumulative downtown San Francisco development has been included in the Bay Area Quality Management Plan projections. The project would not directly conflict with the strategies, and alone would have no measurable impact on citywide or regional concentrations or on the frequency of standard violations. However, it would incrementally impede the objectives of the Plan by generating additional pollutant emissions in San Francisco and elsewhere in the air basin, and in conjunction with cumulative development, could increase ambient concentrations and/or violations of standards.

TABLE 14: PROJECTED WORST-CASE ROADSIDE CARBON MONOXIDE IMPACTS

| Roadway | Averaging Time | Concentration (ppm)* 1982 | 1987 Base + A** | 1987 Base + A** + B*** |
|---|---|---|---|---|
| Bush (between Kearny and Montgomery) | 1-hour | 15.8 | 11.6 | 11.8 |
| | 8-hour | 9.1 | 6.9 | 6.9 |
| Montgomery (between Bush and Sutter) | 1-hour | 14.3 | 11.1 | 11.1 |
| | 8-hour | 8.5 | 6.5 | 6.6 |
| Beale (between Market and Mission) | 1-hour | 14.8 | 14.9 | 15.0 |
| | 8-hour | 7.7 | 6.7 | 6.7 |
| Main (between Mission and Market) | 1-hour | 16.1 | 16.3 | 16.4 |
| | 8-hour | 8.3 | 7.1 | 7.2 |
| Fourth (between Folsom and Harrison) | 1-hour | 18.4 | 14.9 | 15.0 |
| | 8-hour | 9.4 | 7.4 | 7.4 |

* Calculations were made for worst-case (poor-dispersion) meteorology. Background concentrations were assumed to be 10.3 ppm for one hour and 6.5 ppm for eight hours in 1982, and 8.4 ppm for one hour and 5.2 ppm for eight hours in 1987, based on the average of the annual second-highest values monitored over the past three years and adjusted for current and future years according to emissions projections.

** A = Includes projected cumulative development as of August 6, 1982. (See Appendix E, Table E-1, pp. 253-55.)

*** B = Proposed project.

NOTE: Underlined values are those which exceed the applicable standard (35 ppm for one hour, 9 ppm for eight hours).

SOURCES: Environmental Science Associates, Inc., based on traffic data from TJKM, Transportation Consultants and BAAQMD, 1975, Guidelines for Air Quality Impact Analysis of Projects, updated for 1981 emission factor revisions.

NOTES - Air Quality

/1/ U.S. Environmental Protection Agency, 1975, Compilation of Air Pollutant Emission Factors, Supplement No. 5, p.11.2.4-1.

/2/ Association of Bay Area Governments, Bay Area Air Quality Management District and Metropolitan Transportation Commission, Bay Area Air Quality Plan, June, 1982.

## G. ENERGY

Pacific Gas and Electric Company (PG&E) would provide electricity and natural gas to the proposed project through existing distribution systems. Traffic disruption resulting from utility connections and installation of a substreet transformer would be limited to Bush St. in front of the site for about two weeks during construction.

The project would require an unknown amount of energy for demolition of the existing structures, excavation, and removal of excavated material and rubble to a disposal site. Energy required for project construction, including fabrication and transportation of building materials, would be about one trillion BTU./1,2/

The structure is designed to exceed the minimum State Energy Conservation Standards./3/ Space and water heating would be supplied by a natural gas-fired boiler, supplemented by a small amount of electric space heating in the residential units. Air conditioning would be provided by an economizer cycle which would use cool outside air when possible, supplemented by an electric water chiller. A variable air-volume ventilation system would be used. The entire HVAC (heating, ventilating, air conditioning) system would be controlled to respond to weather conditions and building occupancy. Lighting in the office/retail areas would be provided by fluorescent fixtures; individual switching would be installed so that offices could use natural light when available. Single-glazing would be used in windows.

The structure would consume (at point-of-use) about 9.1 million kilowatt-hours (KWH) of electric energy per year, primarily for ventilation and cooling (see Table 15, p. 128)./4/ This would be equivalent to the annual electricity consumption of about 2,800 average residential customers in San Francisco./5/ Of the total annual electricity consumption, office use would account for about 76%, residential about 24%. On a per sq. ft. basis, the structure's electricity consumption would be about 14 KWH per year. This compares to an average of 15 KWH per sq. ft. per year projected in recent EIRs for 13 other high-rise structures;/6/ actual operating consumption may be different. Average monthly electricity consumption by the structure would be about 0.76 million KWH, or about 1.2 KWH per sq. ft. per month. The connected kilowatt load would be about 7,900 KW. Daily and annual electric demand distributions are shown in Figure 26, p. 129. Peak electricity consumption would occur on August afternoons; this would coincide with PG&E's system-wide peak demand period./7/

Operation of the structure would consume (at point-of-use) about 5.3 million cubic feet of natural gas per year, primarily for space and water heating (see Table 15, p. 128)./4/ This would be equivalent to the natural gas consumption of about 67 average residential customers in San Francisco./5/ Of the total annual natural gas consumption, office use would account for about 84%, residential about 16%. On a per sq. ft. basis, the structure's natural gas consumption would be about 8.4 cubic ft. per year. This compares to an average of 23 cubic feet per sq. ft. per year projected for 13 other high-rise structures which have been the subject of recent EIRs;/6/ actual, operating consumption may be different. Average monthly natural gas consumption by the structure would be about 0.44 million cubic feet, or about 0.7 cubic ft. per sq. ft. per month. Daily and annual natural gas demand distributions are shown in Figure 27, p. 130. Peak natural gas consumption would occur on January mornings; this would not coincide with PG&E's system-wide peak demand period which occurs on January evenings.

The above-described energy demands represent an increase in energy use at the site. Existing energy use is estimated to be about 27% of the projected use. Virtually all of these increased energy demands would be met by nonrenewable energy resources. The project would not affect any known solar equipment in the area.

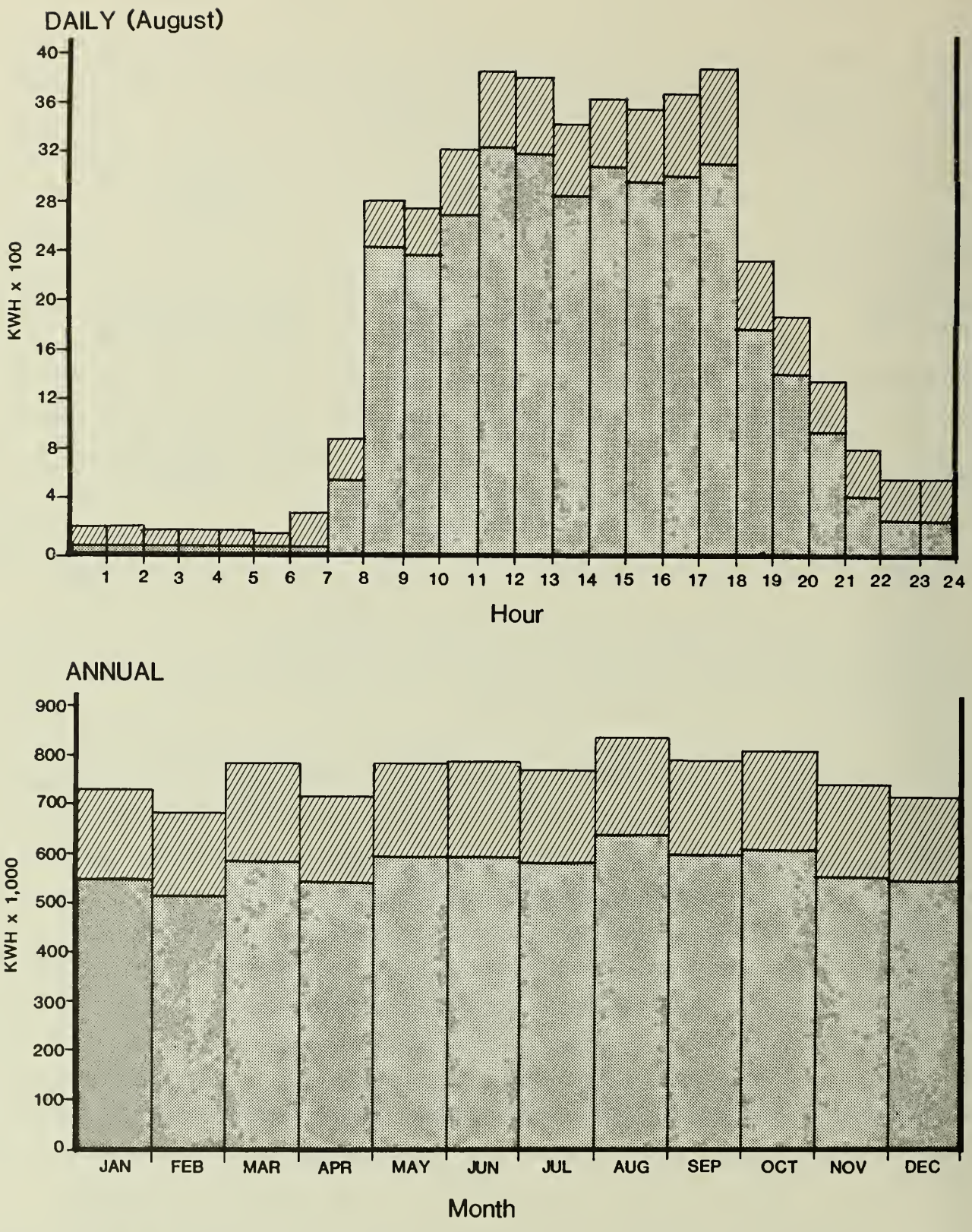
TABLE 15: PROJECTED ANNUAL USE OF ENERGY RESOURCES

| | Point-of-Use Quantity* | At-Source BTU* |
|---|---|---|
| Building Operation: | | |
| Electricity | 9.1 million KWH** | 93 billion BTU |
| Natural Gas | 5.3 million cu.ft. | 5.8 billion BTU |
| Transportation: | | |
| Gasoline (vehicular) | 464,000 gallons | 65 billion BTU |
| Total****: | | 164 billion BTU |

* Quantities of electricity, natural gas, and gasoline represent "point-of-use" energy consumption. The BTU energy equivalents have been adjusted to represent "at-source" energy consumption; i.e., they include energy losses which occur in generation and transmission.
** Includes both nonrenewable and hydro-electric sources.
*** Excludes gasoline for ferries, diesel fuel for buses and trains, and electricity for trolleys and light rail.

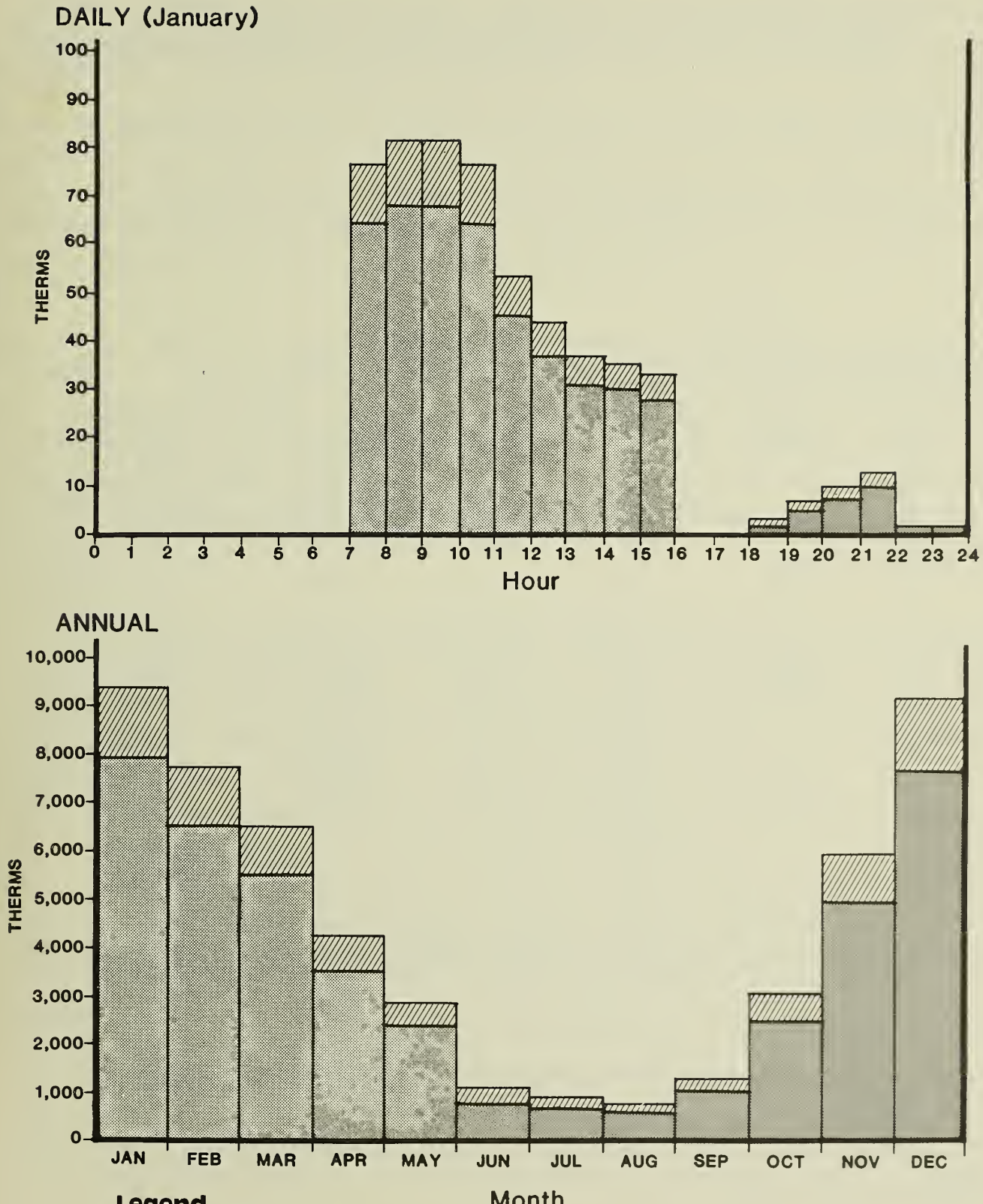
SOURCES: Skidmore, Owings & Merrill; Environmental Science Associates, Inc.

Electricity and natural gas service in the project area is provided by the Pacific Gas and Electric Company (PG&E). PG&E currently obtains its electrical energy from oil, natural gas, nuclear, hydro-electric, and geothermal sources. New demands for electricity in the PG&E service area of Northern California are anticipated to be met primarily from coal, nuclear, and hydroelectric sources. Co-generation and additional geothermal power development are planned to supplement the existing supplies. Among the major new power plants expected by PG&E are the Diablo Canyon nuclear plant and the Helms Pump Storage hydro-electric plant./8/ PG&E expects the first units of each project to begin operating by January 1983 (Diablo Canyon is undergoing seismic safety review and must receive an operating permit from the Nuclear Regulatory Commission before it can begin operation). Unit Two of Diablo Canyon and Units Two and Three of the Helms Plant are anticipated to begin operating in mid-1983. PG&E also anticipates increased purchases of




SOURCE: Skidmore, Owings and Merrill

FIGURE 26:
Projected Electrical Load Distribution




SOURCE: Skidmore, Owings and Merrill

FIGURE 27:
Projected Natural Gas Demand Distribution

electricity from other utilities. This power is expected to come from surplusses generated by hydroelectric and nuclear plants in Washington State. These surplusses are uncertain due to cancellation of two of the five Washington Public Power Supply System nuclear plants and long-term delays in a third plant, as well as increased demand for electricity in the Pacific Northwest. PG&E would be able to supply electricity to the project even if Diablo Canyon were not to begin operating; however, projected costs would be higher and reserve margins would be less.

Vehicular energy consumption (at point-of-use) for the project, including transportation of employees, visitors, and residents is projected to be 464,000 gallons of gasoline in 1984 (see Table 15, p. 128). Additional energy in the form of gasoline for ferries, diesel fuel for buses and trains, and electricity for trolleys and light rail, responding to project demand, would be used. Project-generated transportation energy would also be provided by nonrenewable resources.

The project and other office development under review, approved, or under construction in downtown San Francisco (see Table E-1, pp. 253-255) would increase electricity consumption by about 260 million killowatt-hours per year and would increase natural gas consumption by about 403 million cubic feet per year for building operations. Transportation associated with this cumulative office development would increase diesel fuel consumption by about 1.3 million gallons per year, gasoline consumption by about 8.8 million gallons per year, and electricity consumption by about 52 million killowatt-hours per year (see Table 7, p. 95). The total increase in energy demand would be about five trillion Btu/1/ annually, equivalent to about 880,000 barrels of oil per year.

NOTES - Energy

/1/ Hannon et al., "Energy and Labor in the Construction Sector", November 24, 1978, Science, Vol. 202.

/2/ BTU, British Thermal Units, are units for measuring energy. One BTU is the quantity of heat required to raise the temperature of one pound of water one degree F at sea level.

/3/ State energy efficiency standards are described in Conservation Division Regulations Establishing Energy Conservation Standards for New Residential Buildings and ...New Nonresidential Buildings, February, 1980, California Administrative Code, Title 24, Part 6.

/4/ Skidmore, Owings & Merrill, October 29, 1981, Interoffice Memo from Harry Ajmani et al. to Bob Towle; on file at the OER.

/5/ This estimate is based on energy consumption data provided by Mr. Aleem, Rates Dept., Pacific Gas and Electric Co., July 1, 1982.

/6/ Projected energy used by individual buildings:

| Project | GSF | Electricity KWH/sf/yr | Natural Gas Btu/sf/yr (x 1,000) | Year of Anticipated Completion | Total Btu x 10⁹ |
|---|---|---|---|---|---|
| 101 Montgomery | 248,480 | 27.4 | 24.1 | 1983 | 76 |
| Central Plaza | 370,580 | 13.3 | 4.6 | - | 48 |
| Montgomery/Washington | 243,600 | 20.0 | 16.5 | - | 53 |
| Bank of Canton | 230,440 | 13.8 | 9.9 | - | 30 |
| 201 Spear | 262,000 | 15.6 | 2.9 | - | 40 |
| Federal Reserve Bank | 640,000 | 16.8 | 55.1 | 1982 | 150 |
| Daon Building (Battery & Sacramento) | 289,000 | 16.6 | 16.4 | 1981 | 54 |
| 456 Montgomery | 233,050 | 9.9 | 19.2 | 1983 | 30 |
| 333 California | 870,500 | 17.2 | 6.1 | - | 113 |
| 101 Mission | 223,600 | 10.2 | 40.9 | - | 33 |
| Spear/Main | 308,000 | 10.1 | 67.2 | - | 55 |
| Post/Kearny | 199,100 | 11.9 | 16.8 | - | 28 |
| Pacific Gateway | 341,000 | 15.5 | 21.9 | 1982 | 79 |
| AVERAGE ESTIMATED USE | | 15.2 | 23.2 | | 60.6 |

/7/ Harry Ajmani, Mechanical Engineer, Skidmore, Owings, and Merrill, telephone conversation, June 9, 1982. Skidmore, Owings, and Merrill based their peak energy demand calculations on California Administrative Code, Title 24, California Climate Region 3, which includes San Francisco. The highest average monthly temperature for this region occurs during August. The highest average monthly temperature for the City of San Francisco occurs during September; the difference is approximately one degree Farenheit.

/8/ Jim Davidson, Senior Civil Engineer, Pacific Gas and Electric, telephone conversation, May 21, 1982.

## H. CONSTRUCTION NOISE

Project construction would occur in three stages: demolition, site excavation, and construction. Throughout the 24-month construction period, trucks would initially haul away dirt and debris and then bring in building materials. Construction activities would temporarily increase noise levels at the site by ten to 15 dBA (an increase of three dBA is the minimum perceptible to most people; see Figure G-1, p. 276 for examples of dBA levels of common sounds).

The project would be expected to use a mat (cellular) foundation, which would not require pile driving. During construction, all powered equipment other than impact tools must comply with the San Francisco Noise Ordinance, which limits noise emissions to 80 dBA at a distance of 100 ft. Appendix G, p. 276, provides a chart of everyday noise levels for comparison.

The Noise Ordinance prohibits construction work from 8:00 p.m. to 7:00 a.m., if noise from such work exceeds the ambient noise level by five dBA at the property line, unless a special permit is authorized by the San Francisco Department of Public Works. During construction, many types of equipment are used. Typical demolition and construction noise levels anticipated for the project are shown in Table 16.

TABLE 16: TYPICAL COMMERCIAL/INDUSTRIAL CONSTRUCTION NOISE LEVELS AT 50 FEET

| Construction Phase | Average Noise Level |
|---|---|
| Ground clearing | 84 dBA |
| Excavation | 89 |
| Foundations | 78 |
| Erection | 85 |
| Finishing | 89 |

SOURCE: Bolt, Beranek, and Newman, December 31, 1971, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, U.S. Environmental Protection Agency, p. 20.

The impact of construction noise is primarily based on the noise levels created during construction and the location and distance of sensitive noise receptors from the project site. Because the surrounding area contains residential hotels, offices, and retail shops and restaurants, residents and workers would be affected by construction noise. Figures 2 and 12, pp. 15 and 34, identify the buildings and land uses, respectively, in the vicinity. Office buildings with ground floor shops and restaurants include the Alexander, French Bank, Central Realty, 200 Kearny, Robins, Marston, and Alto buildings. The Hotel Stanford, a residential hotel with Orsi's restaurant at ground level, adjoins the project on the west. The Hallidie Building located south of the project site houses a bank and bank offices. Because of their proximity to the project site, occupants of these buildings could be affected by project construction noise.

The Hallidie Building, Stanford Hotel, Orsi's Restaurant, and French Bank, all adjacent to the project site, would include the most sensitive receptors of construction noise. Although these buildings would be separated from the project site by back or side walls, intermittent interior noise levels during project construction would be expected to reach 88 dBA (during excavation and steel erection). (This assumes that these buildings have openable windows.) At this noise level communication would be affected and shouting would be required at two to three feet. Telephone conversation would also be hampered./1/ In addition, daytime sleepers in the Stanford Hotel would be disturbed intermittently during the 12 month excavation and frame erection period.

Construction noise levels would reach 70 to 80 dBA in the interior of the following other buildings on the same block: Central Realty, Robins, Alto, and Alexander buildings. Close to the site, the Shasta Hotel (a residential hotel), Sam's Grill, San Francisco Curb Exchange (currently vacant), and the Russ Building would be subjected to a noise level of about 70 dBA due to project construction. Presently, the interior noise levels in buildings adjacent to the site are estimated to be 45 dBA, with peak incidental noise levels determined by interior activity. A building at a distance of 200 ft. from the source of the construction noise would have an interior noise level of about 60 dBA. Noise levels between 60 and 65 dBA would interfere with

speech and concentration, distracting employees and others, and requiring raised voices to communicate. The highest level of average construction noise is estimated to be 89 dBA (see Table 16, p. 133). At this level, construction noise would be audible up to a distance of about 1,100 feet; beyond that point, the noise level within the interior of buildings would be about 45 dBA.

NOTE - Construction Noise

/1/ U.S. Department of Health, Education, and Welfare, Health Services and Mental Health Administration, 1972, Occupational Exposure to Noise, p. 17.

## I. GEOLOGY, SEISMOLOGY AND HYDROLOGY

### GEOLOGY

A geotechnical report was made for the project./1/ Approximately 50,000 cu. yds. of material would be removed during excavation. Unstable artificial fill materials and sandy clays under the existing on-site basements would be removed to a depth of about 22 feet below San Francisco Datum (which is 8.6 feet above mean sea level); the planned spread-footing on mat foundation would rest on underlying dense sands./1/ Such sands generally form a sound foundation base and are a common foundation material for buildings in downtown San Francisco.

During site excavation, the removal of earth and debris from the demolished buildings could cause silt and sand to spill in the streets along the haul routes. This spillage could present an inconvenience and safety hazard for pedestrians and operators of vehicles, particularly motorcyclists and bicyclists. The dirt would also be a source of airborne dust, and siltation in storm drains. Bush and Trinity streets would be mechanically swept during excavation and demolition as required by the San Francisco Building Code.

Dewatering of the excavation pit would be necessary. Dewatering could cause settlement in the soils adjacent to the excavation pit which, in turn, could cause walls of neighboring old brick and masonry buildings which lack rigid footings to crack or lean out of plumb, and their floors to bend or tilt.

Settlement also might cause cracks or swales/2/ in adjacent streets and sidewalks, and could damage underground utility lines. Because of the potentially high costs of repairs associated with such damage, the Department of Public Works generally requires that a surety bond be posted before issuance of an excavation permit. The construction contractor would be held responsible for any damage which might result from dewatering.

SEISMOLOGY

The site is in an area with the potential for strong ground shaking during a major earthquake./3/ This might damage the proposed office tower, but would not be expected to cause its collapse. The building would be constructed with a flexible structural steel frame on a spread footing-type foundation or on caissons, and would be designed to meet the seismic standards of the San Francisco Building Code.

The swaying motions of the building in a major earthquake, particularly one of long duration, could topple bookcases, overturn furniture or cause the fall of heavy ceilings, light fixtures and unattached objects. The upper floors of the building could sway up to 22 in., which could break some windows and dislodge exterior granite panels, posing a potential hazard to pedestrians and vehicular traffic.

The net effect of the proposed project could be to reduce daytime seismic hazards at the site, as the proposed building would be constructed to meet the specifications of the San Francisco Building Code, (including emergency water supply and pumps) and would replace existing pre-code buildings. The risk of injury due to seismic hazards at night would be increased due to the addition of night time residents to a site where none existed previously.

If liquefaction, lateral landsliding, or rapid settlement were to occur in the project vicinity, the project could settle, and water mains, pipes and underground utility lines could break, leaving the building without water, power, or telephone communications. Elevators could be made inoperable due to loss of power or damage to the elevator system. Local streets could buckle or crack due to lateral landsliding accompanying liquefaction or rapid settlement.

HYDROLOGY

The proposed project, as the existing structures, would occupy the entire site; thus, no change in surface runoff from the site would be anticipated. Dewatering during project construction would be necessary in the excavation pit due to the high groundwater table with reference to the depth of the pit. The actual ammount of water to be removed has not yet been determined. The water extracted through dewatering would be discharged into the storm drain system. If this water were directed into the street gutter, some sand and silt material would be deposited on the street and in the storm drains. Street silt creates a minor safety hazard and inconvenience for pedestrians and some vehicles, such as motorcycles and bicycles, and provides a source of airborne particulates.

Temporary lowering of the groundwater levels due to dewatering is not expected to have any permanent impact upon groundwater conditions in the area. The project would have no direct impact upon water quality.

NOTES - Geology, Seismology and Hydrology

/1/ Harding-Lawson Associates, Geotechnical Investigation, 38 Story Office/Apartment Building, 333 Bush St. San Francisco, Calif. July 16, 1982.

/2/ A swale is a slight depression in generally level ground.

/3/ The San Francisco Intensity scale is a rating system of the effects of ground shaking on a scale of five including weak, strong, very strong, violent, and very violent. URS/John Blume and Associates, San Francisco Seismic Safety Investigation, (June 1974) used this scale in its seismic safety investigations (1974) in rating the estimated intensity of future ground shaking in San Francisco.

## J. GROWTH INDUCEMENT

The project would have about 521,805 gross sq. ft. of office space and 10,580 gross sq. ft. of retail/restaurant space; it would eliminate about 17,700 gross sq. ft. of office space and about 27,150 gross sq. ft. of retail/restaurant space from the Financial District. Thus, there would be an increase of about 504,105 sq. ft. of office space and a decrease of about

16,650 sq. ft. of retail/restaurant space on the site. Employment at the site would increase by about 1,995, from about 140 to about 2,135. The identities of occupants of the proposed project are not presently known, but would probably include tenants expanding or relocating from other San Francisco locations, tenants relocating from outside San Francisco, and firms new to the Bay Area. Therefore, the increase in employment at the project site would not necessarily represent employment that is new to San Francisco. If the building were fully leased and the office space provided by the project did not create permanent vacancies in other San Francisco office buildings, total employment in San Francisco would eventually increase directly by about 2,130 jobs due to the project. Approximately 2,390 additional jobs would be indirectly supported in San Francisco through the multiplier effect (see Section IV. D., Employment, Housing, and Fiscal Factors, p. 86).

The growth in direct and indirect employment from the project would respond to the demand for office space in San Francisco's Financial District. This demand would exist whether or not the proposed project were built. The demand for office space continues the trend of strong growth in service sector and headquarters office activities and employment in San Francisco. The increases in downtown office space and employment would contribute in turn, to continued growth of local and regional markets for goods, services and housing. The project would add to this growth.

It is expected that some workers at the project would desire to live in San Francisco. The office portion of the project would generate a demand for 464 dwelling units in San Francisco according to the formula of the Department of City Planning. For a discussion of this demand and housing affordability, please see pp. 91-93.

Any net increase in employment downtown would increase the demand for retail goods and food services in the area. By increasing office employment, the project would intensify the demand for retail goods and food services. Some of this demand would be met by the proposed 10,580 gross sq. ft. of retail/restaurant space on the ground floor of the project. Some of the existing retail establishments might relocate here or they could be replaced by other establishments able to afford higher rents.

Increases in employment downtown would also increase demand for business services, to the extent that the expanded space would not be occupied by firms providing those services. In response, demand would increase for existing space and possibly for further new development.

The proposed provision of about 56 condominium units in the project could generate a demand for resident-serving retail services. To the extent that they are not located within the project, new facilities could be induced to locate nearby. The placement of residential units in this location could tend to encourage other new developments in the Financial District to include housing.

# V. MITIGATION MEASURES PROPOSED TO MINIMIZE THE POTENTIAL IMPACTS OF THE PROJECT

In the course of project planning and design, measures have been identified which would reduce or eliminate potential environmental impacts of the proposed project. Some of these measures have been adopted by the project sponsors, their architects or contractors, and others have been rejected by the sponsors.

Each mitigation measure and its status are discussed below. Where a measure has been rejected, the reasons for this are discussed.

## A. ARCHITECTURAL AND CULTURAL RESOURCES

MEASURES PROPOSED AS PART OF THE PROJECT

1. Should evidence of significant cultural or historic artifacts be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an expert archaeologist to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

2. The project sponsor would assure the long-term preservation of the Hallidie Building through purchase and transfer of unused development rights above that building; an easement of light and air for 99 years restricting any structures on the Hallidie site to the existing seven story and one story (behind the Hallidie Building, between that building and the project) heights; and purchase of a facade easement in perpetuity.

B. URBAN DESIGN

MEASURES PROPOSED AS PART OF THE PROJECT

3. The project sponsor would provide public open space areas (two publicly accessible plazas), multiple building entrances, and side setbacks in order which would enhance this pedestrian environment in the Financial District, facilitate access to the building and reduce the cumulative visual effect of high-rise structures in the vicinity.

4. Variations in the vertical building faces at the corners of the project tower, including vertical setbacks beginning at the Terrace Level, would reduce the apparent scale and bulk of the building. The project's upper-level setbacks and narrowing of the tower in the residential portion would also reduce the apparent size of the building and provide visual interest from long-range views. The low building base and configuration of the tower would help relate it to nearby older buildings and would provide a transition in height from the high-rise buildings of the C-3-O district to the lower structures west of the site.

5. The project sponsor would install decorative paving on Trinity St., in association with other property owners and after approval of the Department of Public Works.

6. The project would include pedestrian amenities along Trinity St. and Bush St., in ground-level building areas, and on the public plazas of the Terrace Level. These amenities would include: pedestrian-scale retail uses fronting Bush St. at Trinity St. and along the full length of the

site on Trinity St.; sidewalk landscaping; facilitated access to work, shopping, recreation spaces and transit facilities (multiple building entrances and transit proximity); and two publicly accessible plazas removed from the street and developed for public use with landscaping, night lighting, seating and wind protection. The plazas would also have a distinctive entrance treatment to attract pedestrians.

## C. EMPLOYMENT, HOUSING, AND FISCAL FACTORS

MEASURES PROPOSED AS PART OF THE PROJECT

7. The project sponsor would assist the existing on-site restaurants and retail tenants in relocation. This assistance would take the form of access to information about available commercial space in and around the Financial District provided by the project sponsor's real estate division.

8. The project would include, on site, about 56-two bedroom residential condominiums. Units would be about 1,300 sq.ft. each. Project housing would mitigate, in part, increased demands on the City's housing supply, expected to be generated by the project's office development.

MEASURE NOT INCLUDED AS PART OF THE PROJECT

9. According to the Department of City Planning housing demand formula, the office area of the project would generate a demand for 464 residential units in San Francisco. Fifty-six, two-bedroom units are proposed as part of the project. The City Planning Commission could require the project sponsor to satisfy the remainder of the demand by development of units off-site, or by other means such as contribution to a non-profit housing development corporation or participation in the Planning Commission's Office Housing Production Program.

D. TRANSPORTATION, CIRCULATION AND PARKING

MEASURES PROPOSED AS PART OF THE PROJECT

10. The project sponsors would comply with the provisions of Ordinance 224-81 or any other measures finally adopted by the Board of Supervisors for funding of transit development and improvement to meet the peak transit demands caused by cumulative office development in the Downtown area.

11. The project sponsors would install paving, landscaping and structures on Bush and Trinity Sts. sidewalk area (subject to review and approval by the Department of Public Works) so as to minimize interference with pedestrian traffic on the two sidewalks.

12. Building directories and visual aids indicating the location of project freight elevators would be placed in the loading and service area of the building, consistent with off-street loading recommendations contained in Guiding Downtown Development.

13. The project sponsors and the construction contractor would meet with the Traffic Engineering Division of the Bureau of Engineering to determine feasible traffic mitigation measures to reduce traffic congestion during construction. In addition, the project sponsor would coordinate with construction contractors for any nearby concurrent construction, in order to minimize traffic impacts due to truck movements, lane closure or street excavation.

14. During the construction period the project sponsor would attempt to schedule project truck movement to minimize peak-hour traffic conflicts.

15. A transportation broker would be located in the project management office to encourage transit use through the on-site sale of BART and Muni passes and Golden Gate Transit commute books to employees, and to provide a central clearinghouse for car pool and van pool information in cooperation with the RIDES for Bay Area Commuters program.

16. The project would include about 56 parking spaces for the residential portion of the building, or 42 spaces more than the residential parking requirement of one space for each four dwelling units in the C-3-O District as prescribed by Section 151 of the City Planning Code. This would mitigate the expected demand for parking generated by the project's residents.

17. Upon project completion, and with the help of the Department of City Planning, the project sponsors would encourage tenant firms to implement a flexible time ("flex-time") system for employee working hours (flex-time is designed to reduce peaks of congestion in the transportation system).

18. Within a year of receiving a certificate of occupancy of the project, the project sponsors would conduct a survey, in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants and actual pick-up and drop-off areas for carpools and vanpools. The project sponsor would make this survey available to the Department.

19. The building would have "eyebolt" fixtures suitable for suspending Muni trolley wires on Bush St. frontage in accordance with the recommendations of the Muni planning department, should Bush St. be proposed as a route for electrified trolley cars,

MEASURES THAT COULD BE IMPLEMENTED BY PUBLIC AGENCIES

20. The project sponsor could request, and the Department of Public Works implement, designation of a portion of the curb space on the Bush St. frontage of the project site as a passenger loading zone (white curb). This would reduce double parking during hours when curbside parking is allowed. The project sponsor is considering this measure and would make such a request if double parking were to become a problem.

21. For any additional traffic mitigation measures (such as lane striping changes, signal modification, channelization, etc.) which are determined to be required as a result of the proposed project, the project sponsors could be required by the City to fund the costs of the improvements, as deemed necessary by the appropriate implementing City agency.

22. The overload that would occur on Muni and Southern Pacific due to cumulative development in the Downtown area could be mitigated by provision of additional transit vehicles, by headway changes, and possibly by shifts in Muni routes. Implementation of this mitigation measure by the transit carrier would depend primarily on the availability of funds and on actions initiated by the Metropolitan Transportation Commission (MTC) and Caltrans.

23. The projected peak-hour level of service at the intersection of Beale and Mission Sts. would be reduced to F under cumulative development conditions, including implementation of the proposed project. The San Francisco Department of Public Works could partially mitigate this effect by prohibiting left turns from Mission St. onto Beale St. and by restriping the Beale St. approach to the intersection from four lanes to five lanes (and removing parking). The level of service would change from F to E during the p.m. peak-hour (volume to capacity ratio (v/c) change from 1.60 to 1.00) for the suggested pattern. Implementation of such a measure would be under the jurisdiction of the Department of Public Works (DPW) Bureau of Traffic Engineering and would be considered when the projected conditions develop. This measure may not be desirable as the traffic currently turning left would redistribute itself, thus adding travel on the street system.

24. The critical approach to the intersection of Mission and Main Sts. is the freeway off-ramp which currently has two lanes northbound onto Main St. and a left-turn lane. The volume of traffic projected to use these lanes, including cumulative development would decrease the Level of Service to F as the projected volume would exceed the carrying capacity of the freeway off-ramp as it is currently constructed. An additional left-turn lane would need to be added to increase the capacity of the off-ramp. More

green time could be allocated to the appropriate phase of the traffic signal by prohibiting left-turns from eastbound Mission St. onto Main St. This measure would change the level of service from F to D (v/c ratio change of 1.32 to 0.94). Prohibition of left turns would be entirely under the jurisdiction of the Bureau of Traffic Engineering (DPW) and would be considered a possible solution at such time as the projected conditions develop. Lane additions to the off-ramp would be under the jurisdiction of CalTrans.

25. Pacific Gas and Electric Company could coordinate work schedules with other utilities requiring trenching, so that street disruption would take place during weekends and off-peak hours. This would be done through the San Francisco Committee for Utility Liason on Construction and Other Projects (CULCOP).

## E. AIR QUALITY

MEASURES PROPOSED AS PART OF THE PROJECT

26. During excavation, the general contractor would sprinkle unpaved demolition and construction areas with water at least twice a day, which would reduce dust generation by about 50%.

27. The general contractor would maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks in loading or unloading queues would be kept with their engines off when not in use, to reduce vehicle emissions.

28. Measures to mitigate traffic congestion would also reduce air pollutant emissions (see Section D, above).

## F. ENERGY

MEASURES PROPOSED AS PART OF THE PROJECT

29. A variable air-volume ventilation system, equipped with an economizer cycle would be used to reduce energy consumption for air conditioning.

30. Office suites would be equipped with individual light switches, time clock operation and fluorescent lights to conserve electric energy.

31. Residential and office water heating systems would be insulated to minimize water waste and waste heat. In residential units, water heaters would be placed as close as possible to the source of use (sinks, showers, dishwashers) to minimize water waste and waste heat.

32. Residential units would have individually-metered electric service to encourage energy conservation.

33. The project would provide containers, to be located on a parking level, available to tenants and residents of the building for collection and storage of recyclable solid wastes (such as glass, metal, computer cards, and newspaper) and the building manager would contract for recycling service.

34. The building would be equipped with a trash compactor for use by commercial, office and residential tenants to reduce the volume of solid waste requiring storage and transport.

35. The residential floors of the building would have windows that could be opened to reduce energy requirements for cooling.

36. The project would adhere to the guidelines of the (now withdrawn) Federal Energy Building Temperature Restrictions in the Operation of heating, ventilating and air conditioning (HVAC) equipment. The project HVAC system would be equipped with an economizer cycle to use outside air, as feasible, for cooling.

37. Whenever possible, the HVAC system would be designed to recycle waste heat from lights and machinery to heat domestic water for office and residential use.

MEASURES NOT INCLUDED AS PART OF THE PROJECT

38. A solar collector system to provide hot water for the residential portion of the structure was rejected by the project sponsor because the architect determined that there would not be sufficient rooftop space for its installation since the roof area would provide resident's open space.

39. Double-paned windows were rejected by the project sponsor because, while less space heating would be necessary in the cooler months of the year, the decreased heat loss from double panes would increase air conditioning requirements during warm months, PG&E's system-wide peak electrical periods.

40. Windows that could be opened on office floors were rejected because they would provide little energy benefit over the planned environmental control in the building and could result in inefficient operation of the environmental control system.

G. CONSTRUCTION NOISE

MEASURES PROPOSED AS PART OF THE PROJECT

41. The project would be designed in accordance with the guidelines contained in the Environmental Protection element of the Comprehensive Plan for both residential and office uses.

42. The project contractor would muffle and shield intakes and exhausts, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment when possible, as determined by the Department of Public Works.

43. The general contractor would construct barriers around the site, and around stationary equipment such as compressors which would reduce construction noise by as much as 5 dBA. The general contractor would locate stationary equipment in pit areas or excavated areas as these areas would serve as noise barriers.

44. The contractor would locate noisy equipment away from the residential Hotel Stanford, (with frontages on Bush and Kearny Sts. and Hardie Pl.), insofar as possible.

H. LAND (Geology, Seismology and Hydrology)

MEASURES PROPOSED AS PART OF THE PROJECT

45. A detailed foundation and structural design study would be conducted for the building by a California-licensed structural engineer and a California-licensed geotechnical consultant. The project sponsors would follow the recommendations of these studies during the final design and construction of the project.

46. The project sponsors would post a surety bond, if required by the San Francisco Department of Public Works, before issuance of a permit to excavate. Such a bond would protect the City against damages to City-owned sidewalks, streets and utilities.

47. The project sponsors would require the project contractor and sub-contractors to obtain a Faithful Performance and Payment Bond, if proper financial capability is not evident, and to be responsible for any damage to existing buildings that might result from excavation.

48. Excavation pit walls would be shored and protected from slumping or lateral movement of soils into the pit. Shoring and sheeting would be done by using soldier beams for this purpose.

49. The level of the water table and potential settlement and subsidence would be monitored by the general contractor. The City could require a lateral and settlement survey to monitor any movement or settlement of surrounding buildings and adjacent streets during the dewatering. Control lines and benchmarks would be established for monitoring horizontal and vertical movement.

50. If, in the judgment of City engineers, unacceptable subsidence were to occur during construction, groundwater recharge would be used to halt the settlement.

51. Groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this is found necessary by the Industrial Waste Division of the Department of Public Works, to prevent sediment from entering the storm drain/sewer lines.

52. The contractor would confine construction equipment maintenance and refueling activities to locations where petroleum spillage would be contained, and would construct wet and dry catchment basins on site to trap silt and debris for later transportation to dumps. The contractor would flush contaminants to catchment basins and would monitor debris and water quality of material discharged into City sewers.

## I. PUBLIC SERVICES

53. To reduce the demand on police protection services, the project would incorporate internal security measures which could include such features as a 24-hour staffed guard station in the lobby area, internal security personnel, well-lit entries, alarm systems, and call-telephones for the residential portion of the building.

J. HAZARDS

54. An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to insure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before issuance by the Department of Public Works of final building occupancy permits.

# VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

## ARCHITECTURAL AND CULTURAL RESOURCES

The project would require demolition of the Financial Center Garage, rated "B" in the Heritage Survey and "O" in the 1976 Department of City Planning Architectural Survey. This building conforms to the criteria for inclusion in the list of architecturally and/or historically significant buildings established by City Planning Commission Resolution No. 8600, although it was omitted from the published list by error. The project is adjacent to (behind) a group of buildings along the north side of Sutter St. between Kearny and Montgomery Sts., recognized as an architecturally and historically important group of retail buildings, described by Heritage as "one of the finest and most important short stretches of architecture in downtown San Francisco." The project would contrast, in size and scale, to these retail buildings, although it would be similar in height to newer buildings in the Financial District. The project, through purchase and transfer of development rights, a 99 year light and air easment, and a facade easement in perpetuity, would result in the long-term preservation of the Hallidie Building in the Sutter St. group.

## EMPLOYMENT, HOUSING AND FISCAL FACTORS

Housing. According to the Department of City Planning housing formula the project would generate a demand for 464 units of housing in San Francisco. According to the methodology described on Table D-2, p. 246, the project would generate a demand for 290 units on the Peninsula, 480 units in the East Bay, and 190 in the North Bay. The 56 two-bedroom condominiums proposed provide about 12% of the estimated demand (464 units) in San Francisco and would generate 112 housing credits according to the OHPP. Based on assumptions made (see "Housing Affordability" section, pp. 91-93, for complete discussion of these assumptions), including household size, and income, most project employees would probably not be able to purchase the proposed condominiums.

TRANSPORTATION, CIRCULATION AND PARKING

Parking/Travel Demand. The project would generate about 6,650 person trip ends per weekday, and about 1,370 person trip ends during the p.m. peak hour. The project would generate a demand for 490 long-term parking spaces per day, and would require about 40 short-term parking spaces. The project would provide 100 on-site spaces, of which about 56 would be allocated to the residential uses. The project would eliminate a parking garage of about 360 spaces. Compared to the present, where available on-site parking parking exceeds site-generated demand, the proposed project would require 530 spaces hourly, displace 360 spaces, and provide about 100. The total, combined net parking deficit would be 790 spaces. The project would eliminate the current trip generation to and from the garage. Based on this trade-off, the project would result in minimal impact on the adjacent street system. Traffic from cumulative development in the vicinity would cause traffic conditions to worsen in the downtown area. The project would represent 3.1 percent of the total cumulative demand of 15,600 long-term spaces projected for 1987. This does not include any parking displaced or added by cumulative development or the project.

BART and Muni. The project would contribute to cumulative impacts on BART and Muni and other transit carriers by increasing the number of office workers downtown and causing a loss of 360 parking spaces by the removal of the Financial Center garage. Increased transit ridership from the project would represent 2.8% of the cumulative development demand to 1987. Increased ridership resulting from cumulative development would create a need for increased subsidy by monies from the City's General Fund.

Pedestrians. Increases in pedestrian flows during both the noon hour and p.m. peak hour from cumulative development including the project would cause the level of operation on the Montgomery St. sidewalk to worsen from impeded to constrained conditions. Addition of the project pedestrian traffic would change the level of operation on the Bush St. sidewalk during the p.m. peak hour from unimpeded to impeded conditions.

# VII. ALTERNATIVES TO THE PROPOSED PROJECT

The project sponsor has considered, and is considering, a number of alternatives to the proposed project.

## 1-A. NO PROJECT

This alternative would entail no change to the site; uses would remain the same as at present. Conditions associated with this alternative would generally remain as discussed in the Environmental Setting section of this report (pp. 31-59). All buildings on the site would be preserved under this alternative. Because existing buildings on the site were built prior to currently applicable seismic, safety and energy standards, they could continue to pose greater life safety hazards to employees and other occupants under certain conditions, such as earthquakes than the proposed project, and energy consumption per sq. ft. of building area would likely be higher than with the project.

In 1987, traffic, transit, noise and air quality conditions (described in Section IV of this report) would be the same as projected base conditions with cumulative development, without the project. Operational noise would be virtually identical (within 1%) to that produced by the project. There would be no change in the demand from the site for community services. The businesses now operating on the site would not have to relocate. Long-term protection of the Hallidie Building through facade easement, light and air easement, and transfer of development rights would not occur under this alternative.

This alternative would preserve options for future development of the site, at an unknown density. The alternative has been rejected by the project sponsor because it would not provide additional office space and residential units to respond to existing demand in San Francisco and because it would be an economic underuse of the site.

This alternative could result in the development of a high-rise building comparable to the project at another location. See Alternatives 1-B and 1-C, below.

1-B. SAME PROJECT AT A DIFFERENT LOCATION

An alternative which would develop the same project in a different location was considered and rejected by the project sponsors; a specific alternative site was not identified. The location could be elsewhere in San Francisco's Financial District, or in another Bay Area location. Under such an alternative, the general impacts attributable to the project and described in Section IV, pp. 60-139 of this report, would occur at the alternative location. Development of a similar project elsewhere in San Francisco would be limited to the C-3-O district and would, generally, result in specific impacts as described for the project. There would be no commitment to long-term preservation of the Hallidie Building. Traffic impacts described for the project would occur at the alternative location depending on site conditions and existing uses, except that a 360-space parking garage would not be displaced. If this alternative were selected, environmental analyses would be necessary to evaluate the impact of the project on the particular setting involved. In general, gross employment created, gross housing demand, fiscal impacts, energy consumption, construction noise created, and growth inducement would likely remain the same as described for the project. There would be no commitment to long-term preservation of the Hallidie Building. The project sponsor has rejected an alternative location in San Francisco because of existing interest in the proposed site, and because the proposed site is a prime location for retail, office, and housing space in the City.

Development at a location outside of San Francisco would probably involve an office building without on-site housing. The impacts of such a project would largely depend upon the location and cannot now be accurately determined; this alternative would require appropriate environmental evaluation of a particular proposal. Development of the project at a different location has been rejected by the project sponsor because of the firm's association with the City of San Francisco, existing interest in the site and the sponsor's conviction that the project site is a prime location for small-scale retail, office space, and housing in the City.

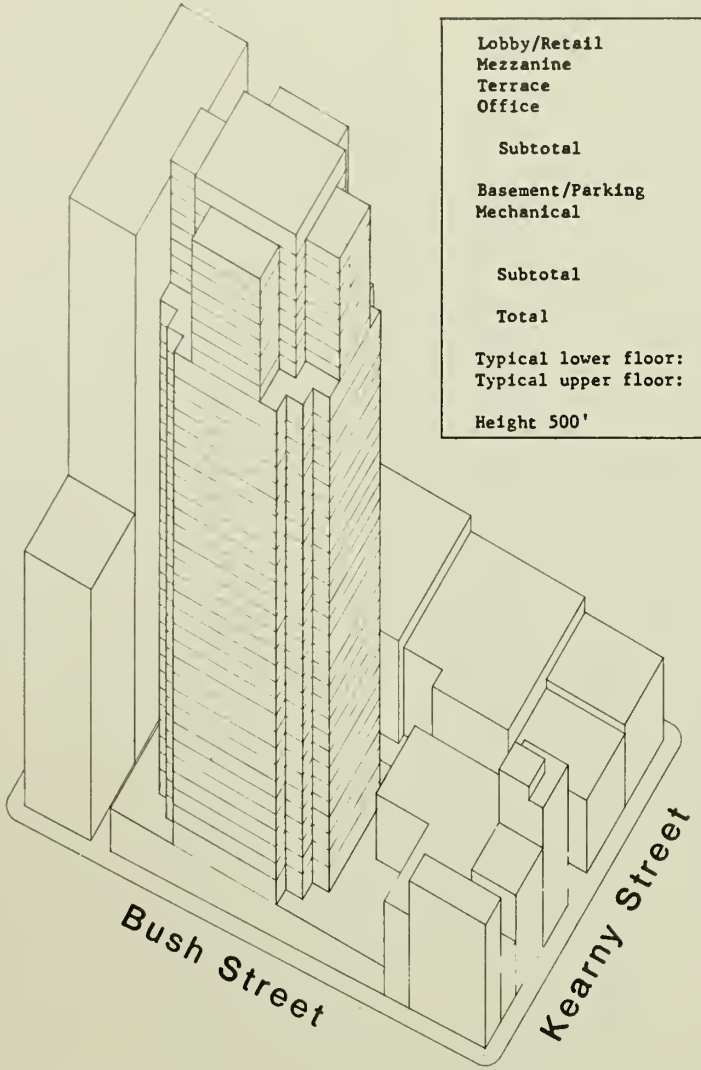
## 1-C. POSTPONEMENT OF SITE DEVELOPMENT

Postponement of site development would not preclude development of the project elsewhere, with associated impacts. For the site and vicinity, postponement of the project would result in postponing the impacts identified in Section IV, pp. 60-139 of this report. The project's incremental contribution to cumulative effects would also be postponed. Lengthy postponement at this site could result in a different type of future development of the site. A single project on the assembled lots might not be possible; the result could be piecemeal development if portions of the site were sold and developed. Development at a greater scale and/or density might be proposed. Economics of incremental, smaller developments might make provision of on-site or off-site housing infeasible. There would be no commitment to long-term preservation of the Hallidie Building. Postponement would probably result in a different mix of uses and design concept, and different responses to possible new or altered statutes and/or regulations governing development.

Postponement of development at this location has been rejected by the project sponsor because it would result in loss of substantial investment in site acquisition, financing and management of the property, and design, engineering and environmental fees, and would be an economic underuse of the site.

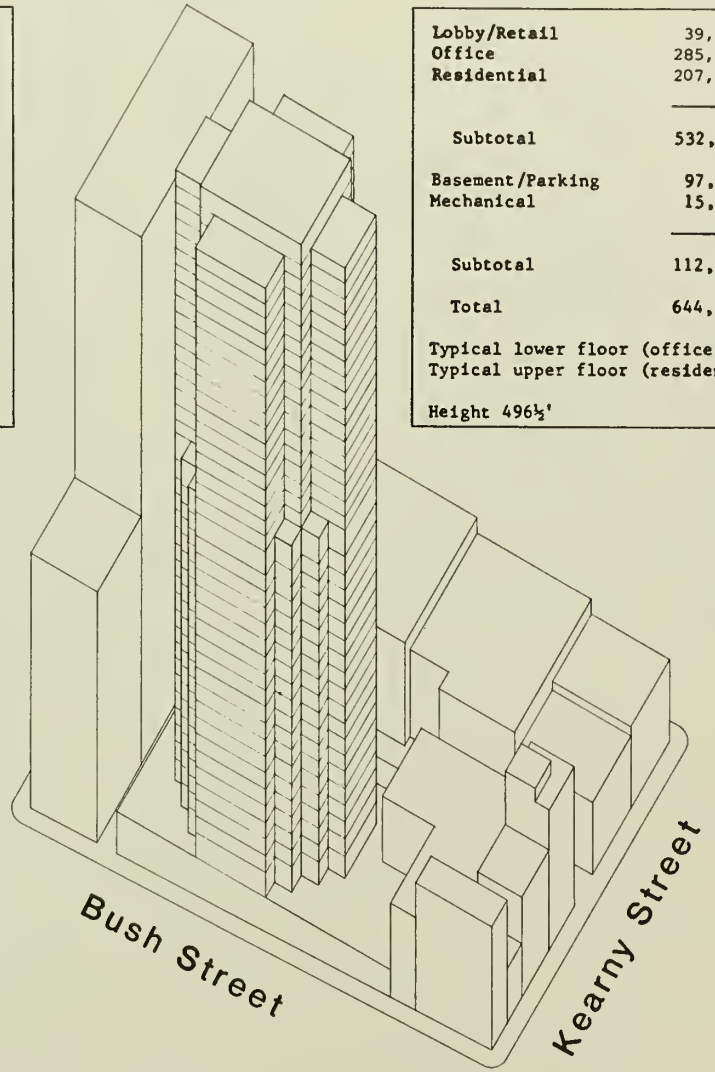
## 2. PRE-INTERIM CONTROLS - OFFICE USE ONLY

This alternative would be a building constructed in accordance with the Pre-Interim Controls, using maximum allowable bonuses applied to office use, and transfer of development rights from the Hallidie Building for development of the maximum amount of office space. Office space only would be provided under this alternative. The allowable basic FAR (13.1:1) plus the transfer of development rights from the Hallidie Building (119,000 sq. ft.) would permit 532,000 gross sq. ft. of office space. Assuming about 111,000 sq. ft. of bonus area, up to 643,000 gross sq. ft. of office space could be provided.




| | | |
|---|---|---|
| Lobby/Retail | 21,400 | SF |
| Mezzanine | 12,690 | |
| Terrace | 18,125 | |
| Office | 591,175 | |
| Subtotal | 643,390 | |
| Basement/Parking | 93,000 | |
| Mechanical | 18,125 | |
| Subtotal | 111,125 | |
| Total | 754,515 | SF |
| Typical lower floor: | 18,125 | |
| Typical upper floor: | 12,724 | |
| Height 500' | | |

Alternative 2
Pre-Interim Controls




| | | |
|---|---|---|
| Lobby/Retail | 39,150 | SF |
| Office | 285,382 | |
| Residential | 207,480 | |
| Subtotal | 532,000 | SF |
| Basement/Parking | 97,018 | |
| Mechanical | 15,178 | |
| Subtotal | 112,196 | |
| Total | 644,196 | SF |
| Typical lower floor (office) | 15,178 | SF |
| Typical upper floor (residential) | 11,895 | SF |
| Height 496½' | | |

Alternative 3
Interim Controls

SOURCE: Skidmore, Owings and Merrill

FIGURE 28: Project Alternatives 2 and 3

The design of this alternative would be similar to the project, with a one-story base and a tower up to the 500 ft. height limit (see Figure 28, p. 157). Average floor sizes would be greater than for the project with diminished side setbacks in order to achieve the maximum allowable floor area within the height limit. Any housing impact determined to result from this alternative, and the requirement to build housing, would be met off-site.

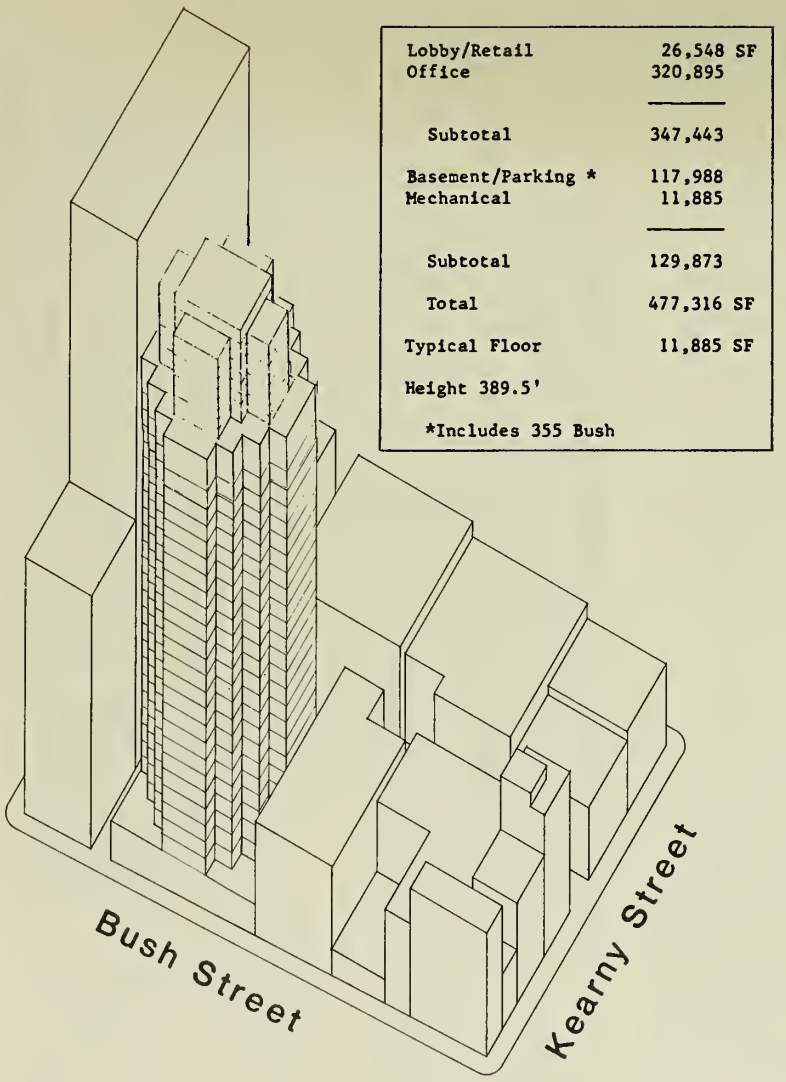
Projected employment, housing demand, and amount of revenue generated for the City's General Fund would increase in proportion to the increase in office space with this alternative. The alternative, because it would allow development of a building as large as or larger than the proposed project, would have physical impacts greater than described in the Environmental Impact section of this report. The increase in office space would proportionally increase parking demand. Air quality and traffic impacts would increase because traffic generated by the project would increase slightly. Energy consumption would also increase, with the peaking characteristics of a single-use structure, in contrast to the different peak demand of residential and office uses combined in the same building proposed with the project. The impact on construction noise; geology, seimology, and hydrology; growth inducement; and urban design, including sunlight and shadow, visual impact, and wind, would be similar to the impacts described for the project in Section IV but would be expected to be greater due to the larger floor areas, reduced setbacks, and generally larger building size.

The project sponsor has rejected this alternative because of the desire to build office and residential space in the Downtown area in a mixed-use building. A larger building could result in greater impacts than the project as proposed. Further, at the present time this alternative may not be approved by the Planning Commission as the current Interim Controls, which provide that bonus space may only be applied to housing, have replaced previous guidelines; thus the alternative is not presently available to the sponsor.

## 3. INTERIM CONTROLS WITH 136 HOUSING UNITS ON SITE

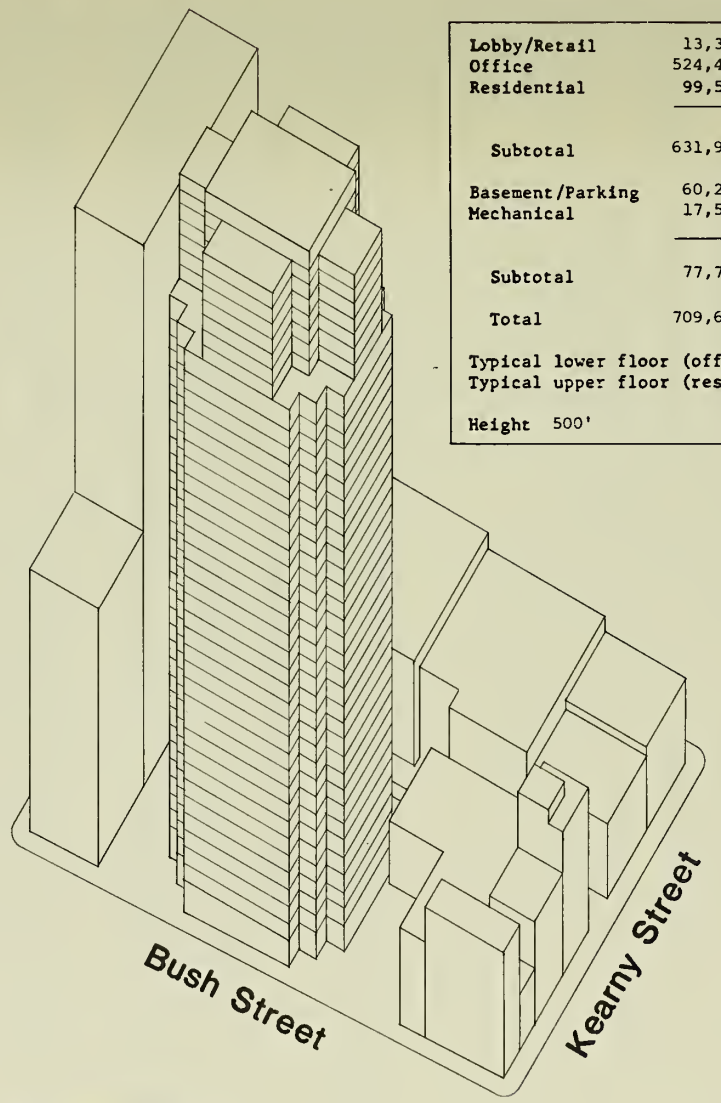
This alternative would be a mixed-use project developed under the Interim Controls for office and residential uses that would provide 136 residential units on site. This alternative would include about 285,382 gross sq. ft. of office space (project would be 521,805 gross sq. ft.), 39,150 sq. ft. of retail space (project would be 10,580 sq. ft.), and 207,500 gross sq. ft. of housing (project would be 101,661 sq. ft.), for a total area of 532,000 sq. ft, compared with 634,046 sq. ft. for the project. The office uses would generate a demand for about 254 dwelling units./1/ This alternative would have 17 residential floors, each with eight two-bedroom units, for a total of 136 units; according to OHPP 272 housing credits could result. The design would be similar to that of the proposed project except that setbacks for the residential floors would begin at floor 21 of the tower, instead of floor 32 with the project, resulting in a building divided approximately in half, with the upper portion narrower than the lower. Building height would be about 500 ft., the same as for the project. (see Figure 28, p. 157, Alternative 3.)

This alternative would contain about 45% less office space and more than two times as many housing units as the proposed project. Retail space would be increased by about four times. Impacts on urban design, construction noise, geology, seismology, and hydrology would be similar to those of the project. This alternative would generate about 55% of the employment to be provided by the project's office space and, consequently, about 55% of the housing demand. Revenues to the City's General Fund would be decreased with this alternative because of the revenue lost from primary and secondary effects of site employment. Demand for on-site parking would probably be greater than for the project due to the larger number of residential units. Assuming one parking space for every four units as required by the Planning Code, 34 spaces would be required for the residents; however, demand from buyers could result in one parking space per unit, in which case the effects of the alternative would be greater than with the project. Peak traffic impact would probably be similar to the project since access and egress from the building for office and residential uses would coincide during the peak hour. Energy use would be increased and peaking patterns would be altered due to the higher proportion of residential space. Residential open space requirements would also be




| | |
|---|---|
| Lobby/Retail | 26,548 SF |
| Office | 320,895 |
| Subtotal | 347,443 |
| Basement/Parking * | 117,988 |
| Mechanical | 11,885 |
| Subtotal | 129,873 |
| Total | 477,316 SF |
| Typical Floor | 11,885 SF |
| Height 389.5' | |
| *Includes 355 Bush | |

Alternative 4
Guiding Downtown Development Alternative




| | | |
|---|---|---|
| Lobby/Retail | 13,385 | SF |
| Office | 524,400 | |
| Residential | 99,598 | |
| Subtotal | 631,983 | SF |
| Basement/Parking | 60,200 | |
| Mechanical | 17,500 | |
| Subtotal | 77,700 | |
| Total | 709,683 | |
| Typical lower floor (office) | 17,300 | SF |
| Typical upper floor (residential) | 13,050 | SF |
| Height 500' | | |

Alternative 6
Ground Level Plaza Alternative

SOURCE: Skidmore, Owings and Merrill

FIGURE 29: Project Alternatives 4 and 6

greater; requirements for the units on the 21st floor would be met by private terraces. Approximately 6,100 sq. ft. of common open space would be required for the remaining 128 units under Section 135 of the Planning Code. Approximately 4,000 sq. ft. of this could be met by a rooftop plaza. The remaining 2,100 sq. ft. could be met by a common residential plaza on the terrace level. This alternative would satisfy less of the current high demand for Financial District office space, resulting in more pressure to build comparable office space elsewhere. General growth-inducing effects, such as continued construction of office space and housing in the area, would be similar to those of the project.

4. PROJECT CONFORMING TO GUIDING DOWNTOWN DEVELOPMENT GUIDELINES

Under this alternative the site would be developed with a building conforming to the guidelines and recommendations of Guiding Downtown Development (GDD) (Department of City Planning, May 1981). GDD contains a series of regulatory proposals for managing development in downtown San Francisco, regarding size, design use and location of major buildings and proposes changes in City Planning Code regulations for the C-3 Planning Code Use Districts. Proposed revisions pertain to housing, transportation, open space, and historic preservation. Table 4, p. 65, compares existing development controls contained in the City Planing Code to the proposed changes in those requirements contained in GDD.

Under the GDD preservation policy, the project sponsor would retain the B-rated Financial Center Garage at 355 Bush St. and transfer development rights (3:1 bonus) from it to the remainder of the site. Lot 28, at the west end of the site, would remain as at present (one-story building in commercial use) and would not be used for development because it would be isolated from the remainder of the site by the retained garage. The garage building was considered for rehabilitation for office use and was found by the architect to be unsuited to this use due to inadequate floor-to-ceiling heights and other structural constraints./2/ On the remainder of the property (Lots 21, 22, 23 and 26), a 400 ft. high building with a gross floor area of 347,400 sq. ft. would be built, a total of about 286,600 gross sq. ft. less than the proposed project. All uses in this alternative would be office and commercial.

It would have an office FAR of 12:1, plus transfer from the preserved structure up to an FAR of 3:1, plus retail bonus of 0.5:1 for a total FAR of 15.5:1.

Under this alternative the ground-floor plan would be different than for the proposed project, but would probably also contain similar retail uses, lobby area and ramps into subsurface parking and service areas. There would be 27 floors of office space, one mechanical level a total of 28 stories, compared with the project's 38 stories. This alternative would comply with the provisions for transfer of bulk from the upper to lower stories of the structure by sculptured upper-level setbacks similar to those of the proposed project. To reduce the appearance of bulk of the upper portions of buildings, GDD would require that the average floor area above the midpoint of the building height be 2/15 less than the average floor area below the midpoint. This alternative would meet this criteria. This alternative would provide the maximum amount of commercial space permitted in GDD and would equal the maximum permitted height of 400 ft. in the proposed Height District.

The GDD guidelines specify that housing be provided at the rate of 640 sq. ft. of housing per 1,000 sq. ft. of office space. Using the formula, approximately 222,340 gross sq. ft. of residential space would be required; this would represent a FAR of about 9:1. This amount of residential space could not be accommodated on the site, if maximum office space were developed under the FAR and height limitations recommended in GDD. The required residential space would be developed on site only if office space were reduced. The project sponsor's objective would be to build the maximum office space in this location and locate the required housing and open space off-site. This alternative would result in a building with about 70% of the gross office/commercial area of the project and without any on-site housing (see Figure 29, p. 160, Alternative 4).

This alternative would incorporate art work into the public entrance areas of the building according to the requirement in GDD specifying that investment in art be equal to at least 1% of total construction costs. The proposed recreation and open space requirement of GDD for office development (1 sq. ft. for each 250 sq. ft. of gross floor area) would be met on Terrace Level and rooftop plazas.

The 13,900 sq. ft. of recreation and open space required for housing under the proposed GDD would have to be provided off-site at another location in a C-3 district. The five loading spaces that would be required under GDD would be provided in a subsurface service level.

The decreased size of the building would result in less employment, less revenue to the City, and no provision of housing in the Financial District. Impacts of this alternative on transportation, air quality, energy consumption, and construction noise would be less than for the project. The effect of this alternative on views and shadows would be less than that of the proposed project because of the reduced height. Wind effects in the vicinity would be less than with the project, as the building would be lower and would maintain a terrace level plaza. Since the B-rated garage would be preserved and its development rights transferred according to the GDD formula, the project sponsor would not need floor area available through long-term protection of the Hallidie Building, part of the proposed project. As described in Section II Project Description, of this report, the project sponsor proposes to contribute directly to the long-term preservation of the Hallidie Building through transfer and utilization of its unused development rights, and dedication of light and air, and facade easements.

The sponsor has rejected this alternative because it would not allow as great an opportunity as would the proposed project for development allowable under the Planning Code. It would also preclude integrated development on lot 28, which the developer has purchased for that purpose. The Foundation for San Francisco's Architectural Heritage (Heritage) has stated it would not oppose demolition of the Financial Center Garage under the condition that the Hallidie Building be preserved, in perpetuity, through the acquisition and use of the unused development rights in the proposed project or on another site./3/ The project sponsor considers his contribution to the preservation of the Hallidie Building more important than preservation of the B-rated Financial Center Garage.

## 5-A. TRANSPORTATION ALTERNATIVE

The existing parking facilities on the site are housed in the Financial Center Garage on Lot 20, built in 1925, and the Garage Annex on Lot 21, built at a later date. Together they contain 360 parking spaces. Of these, 150 are reserved on a monthly basis and are assumed to be long-term spaces; 210 unreserved spaces are available for daily, short-term or long-term use.

There would be two means of retaining 360 parking spaces on site. One would be to retain both the B-rated and the Annex buildings. This has been rejected by the project sponsor for reasons discussed above; in addition, retention of both structures would make integrated, full use of the site infeasible from a design and engineering perspective and in terms of financial return.

The other means of retaining 360 parking spaces on the site would be to increase the depth of subsurface excavation and number of subsurface levels in the project. Costs for additional subsurface levels would be relatively high and would increase dramatically for each additonal basement level. Return on this investment would not be economical under the pricing structure associated with parking. In addition, the depth of excavation required could increase both the amount of dewatering necessary, and the potential for lateral settlement. Both of these could affect the stability of adjacent structures and increase the possibility of structural damage./4/

In most respects, the impacts of this alternative would be similar to those of the project, except for transportation, circulation and parking impacts. The existing parking supply would be maintained. The proportion of the spaces available for short-term parking could be increased over present use depending on the mix of tenant, long-term and short-term parking chosen. It is likely that this alternative would provide all the short-term parking demand of the project on site. Pedestrian conflicts on sidewalks would be similar to existing conditions. Local traffic conditions would be worse than those attributable to the proposed project because, in addition to the people with destinations in the office, commercial or residential portions of the project (which would remain unchanged compared to the project) there would be approximately three times as many automobiles with destination on the site (in

the garage) as with the project. Construction time could be substantially greater than for the project due to the extensive excavation required.

5-B. GROUND-LEVEL PARKING

This alternative would be similar to Alternative 5-A, with the exception of retail uses, which would be replaced by parking; one subsurface level would also be eliminated. If parking were substituted for retail uses, pedestrian traffic to and from these uses would be eliminated, although vehicular traffic to the site would be three times greater than with the project. Pedestrian conflicts on the sidewalks would be similar to present conditions. In addition, displacement of all but a small portion of the ground floor retail space would occur. Because less excavation would be necessary with this alternative than with the project, or Alternative 5-A, less dewatering would be necessary and potential for lateral movement, which could damage adjacent buildings, would be reduced.

5-C. RESIDENTIAL PARKING

This alternative would be identical to the project, except that one level of subsurface parking would be eliminated. The remaining parking level could contain either 14 parking spaces (one for every four dwelling units, conforming to the Planning Code minimum) or 56 parking spaces (one for each dwelling unit). The Code requires one space per four units; it would allow one parking space per unit, since it allows up to 7% of the building's gross area as parking. Providing one space for each four units was rejected by the project sponsor as it would be difficult to sell housing downtown with less than one space per unit.

Impacts associated with the single-level garage alternative would be identical to those of the project, except for traffic. There would be fewer vehicles entering and exiting the garage and corresponding traffic impacts would be slightly less. The sponsor has rejected this alternative because it would not provide any short-term parking demanded by the projects' retail and service uses. Although this alternative would comply with the 1977 Amendments to the Transportation Element of the Master Plan, recent City policy has been to encourage short-term parking associated with major developments.

## 6. GROUND LEVEL PLAZA

This alternative calls for a mixed-use building developed under the Interim Controls with similar office and residential square footages, but with a different building footprint and tower setbacks compared with the project. A ground level plaza would replace the 30 foot high ground floor built out to the property lines on Trinity and Bush Sts. proposed with the project. This alternative would have 631,983 gross sq. ft., compared to 634,046 sq. ft. for the project. It would consist of 30 office floors, seven residential floors, and a ground level with lobby and 5,180 gross sq. ft. of retail (compared with 10,580 sq. ft. for the project). The office area would be 524,400 gross sq. ft. (compared with 521,805 sq. ft. for the project), and the residential area would be 99,598 gross sq. ft. (compared with 101,661 sq. ft. for the project). This alternative would have a total of 38 floors, the same number as the project. Each residential floor would have eight two-bedroom units, for a total of 56 units, as would the project. These could qualify for 112 credits under the Office Housing Production Program (OHPP). Because this building would contain more office space and less retail space than would the project, 473 housing credits would be required under OHPP, compared with 464 with the project.

The design of the tower for this alternative would be similar to the proposed project tower; however, the base would not extend beyond the footprint of the tower. The tower would have a ground level plaza on its east and west sides rather than the extended base or podium proposed for the project. Setbacks for the residential floors would begin at floor 31, similar to the project. Residential open space would be provided on the roof of the building and on the 31st floor setback. Building height would be about 500 ft., as would the height of the project.

Impacts on construction noise, geology, seismology, hydrology, architectural and cultural resources, energy, and air quality would be similar to those of the project. Elimination of the 30 ft. high base would reduce some shadows on Bush St.; street level wind impacts would be increased. This alternative would not maintain continuous building frontages along Trinity and Bush Sts. Accessibility of the plaza areas would be more direct than for the project

which proposes plazas over the ground floor on a second level accessible by stairs from Bush St. Any increase in economic and transportation impacts due to the increase in office space would be offset by the reduction in retail space compared with the proposed project.

This alternative is under consideration by the project sponsor.

NOTES - Alternatives to the Proposed Project

/1/ Housing area for the alternative incorporating all housing requirement on-site was calculated based on the OHPP formula; one employee per 250 sq. ft. of office space times 40% of the project workers living in San Francisco, divided by 1.8 workers per unit.

/2/ Letter communication and report to Randall S. Rossi, Ph.D. from Mr. Robert Towle, Skidmore, Owings and Merrill, December 9, 1982. In addition to low ceiling heights, the report described the following structural constraints in the garage; split level floors that would not allow sufficient floor area for office development on any one level, awkward elevator access and circulation, and ceiling design that would not allow for the required ductwork.

/3/ Letter communication, dated March 25, 1982, from H. Grant Dehart, Executive Director of Heritage, to Peter Clark and Gary Mason, Campeau, stating: "The Board of Directors reviewed the recommendations of the PPC (Preservation Policy Committee) at its March 18 meeting and has agreed not to object to the demolition of the Financial Center Garage at 355 Bush (rated "B" in Splendid Survivors) under the condition that the Hallidie Building at 130-150 Sutter Street will be preserved, in perpetuity, through the acquisition and use of the Hallidie properties unused development potential in your proposed development, or on another site."

/4/ Brad Steen, Engineering Geologist, Harding-Lawson Associates, telephone conversation with Richard Grassetti, Environmental Science Associates, Inc., August 26, 1982.

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City Hall, Room 287
San Francisco, CA 94102
Attention: Mr. Richard Sklar

San Francisco Public Utilities
Commission
Bureau of Energy Conservation
949 Presidio Avenue, Room 111
San Francisco, CA 94115
Attention: Mr. Flint Nelson

San Francisco Water Department
Distribution Division
425 Mason Street
San Francisco, California 94102
Attention: Mr. George Nakagaki, Manager

San Francisco Real Estate Department
450 McAllister Street, Room 600
San Francisco, California 94102
Attention: Mr. Wallace Wortman,
Director of Property

San Francisco Unified School District
135 Van Ness Avenue, Room 209
San Francisco, CA 94102
Attention: Dr. Robert Alioto

GROUPS & INDIVIDUALS

AIA
San Francisco Chapter
790 Market Street
San Francisco, CA 94102

Bay Area Council, Inc.
348 World Trade Center
San Francisco, CA 94111

Peter Bosselman
Environmental Simulation Laboratory
316 University Hall
University of California
Berkeley, CA 94720

Brobeck, Phleger, Harrison
One Market Plaza
San Francisco, CA 94105

David Capron
Lincoln Property Company
220 Sansome Street
San Francisco, CA 94104

Joseph Coriz
2853 22nd Street
San Francisco, CA 94110

Hunt Collins
c/o Home Savings
1730 South El Camino Real
San Mateo, CA 94402

Calvin Dare
Cushman Wakefield
555 California St. Suite 2700
San Francisco, CA 94104

Downtown Association
582 Market Street
San Francisco, CA 94194
Attention: Mr. Lloyd Pflueger

Downtown Senior Social Services
295 Eddy Street
San Francisco, CA 94102

John Elberling
177 Jessie Street
San Francisco, CA 94105

Environmental Impact Planning
319 Eleventh Street
San Francisco, CA. 94103

Friends of the Earth
1045 Sansome St.
San Francisco, California 94111
Attention: Ms. Connie Parrish

The Foundation for San Francisco's
Architectural Heritage
2007 Franklin Street
San Francisco, California 94109
Attention: Mr. Grant Dehart,
Executive Director

Grey Panthers
944 Market Street
San Francisco, CA 94102

Gruen Gruen & Associates
564 Howard Street
San Francisco, CA 94105

Heller, Ehrman, White &
McAuliffe
44 Montgomery Street
San Francisco, CA 94104
Attention: Mr. Robert Gibney

Sue Hestor
4536 - 20th Street
San Francisco, California 94114

Carl Imparato
1205 Garfield
Albany, CA 94705

David Jones
241 Bartlett
San Francisco, CA 94117

Kaplan/Mclaughlin/Diaz
222 Vallejo Street
San Francisco, CA 94111
Attention: Mr. Herb McLaughlin

Chris Lavdiotis
1919 28th Avenue
San Francisco, CA 94116

League of Women Voters
12 Geary Street, Rm 605
San Francisco, CA 94108

Legal Assistance to the Elderly
944 Market Street, #803
San Francisco, CA 94118

Gerald Owyang
1517 Reed Avenue, #2
San Diego, CA 92109

Mrs. G. Bland Platt
339 Walnut Street
San Francisco, CA 94118

Charles Hall Page and Associates
364 Bush Street
San Francisco, CA 94104

David P. Rhoads
44 Montgomery St., Suite 547
San Francisco, CA 94104

San Francisco Beautiful
41 Sutter Street
San Francisco, California 94104
Attention: Mrs. H. Klussman, President

San Francisco Building and Construction Trades Council
400 Alabama Street, Room 100
San Francisco, California 94110
Attention: Mr. Stanley Smith

San Francisco Chamber of Commerce
465 California Street
San Francisco, California 94104
Attention: Mr. Richard Morten

San Francisco Ecology Center
13 Columbus Avenue
San Francisco, CA 94111

San Francisco Junior Chamber of Commerce
251 Kearny Street
San Francisco, CA 94104

San Francisco Labor Council
3058 - 16th Street
San Francisco, California 94103
Attention: Mr. Bernard Speckman

San Francisco Planning and Urban Research Association
312 Sutter Street
San Francisco, California 94108
Attention: Mr. William J. Whalen

San Francisco Convention & Visitors Bureau
1390 Market Street, Suite 260
San Francisco, CA 94102
Attention: R. Sullivan, Manager

San Francisco Forward
690 Market Street
San Francisco, CA 94104

San Francisco Tomorrow
728 Montgomery Street
San Francisco, CA 94111
Attention: Suzanne Smith

San Franciscans for Reasonable Growth
9 First Street
San Francisco, California 94105
Attention: Carl Imparato

John Sanger & Associates
2340 Market Street
San Francisco, CA 94114

Senior Escort Program
South of Market Branch
814 Mission Street
San Francisco, Ca 94100
Attention: Neighborhood Coordinator

Kent E. Soule
Chickering and Gregory
3 Embarcadero Center 23rd Floor
San Francisco, CA 94111

Skidmore, Owings & Merrill
One Maritime Plaza
San Francisco, CA. 94111
Attention: Mr. Bob Towle

Timothy A. Tosta
Timothy A. Tosta Law Corporation
333 Market Street, Suite 2230
San Francisco, CA 94105

Sierra Club
530 Bush Street
San Francisco, California 94105
Attention: Ms. Becky Evans

Tenants & Owners Development Corp.
177 Jessie Street
San Francisco, CA 94105
Attention: John Elberling

Paul Thayer
1033 Stanyon
San Francisco, CA. 94217

Steven Weicker
899 Pine St., #1610
San Francisco, CA 94108

ABUTTING PROPERTY OWNERS

Barbara G. Aaron
c/o D. Houck-Daton
Hudson Corp.
777 Nichallet Mall
Minneapolis, MN 55402

California Jones Co.
105 Montgomery Street
San Francisco, Ca. 94104

Campeau Corporation of California
681 Market Street, Suite 401
San Francisco, Ca. 94105
Attention: Grant Sedgwick;
Jeff Vance; Peter Clark

Edward J. Conner
130 Sutter Street
San Francisco, Ca. 94104

Edward D. Keil Trust
240 Kearny Street
San Francisco, Ca. 94108

Chester R. and Arla Konrad
260 Kearny St.
San Francisco, CA. 94108

Thea W. Lambertsen
126 Sutter Street
San Francisco, Ca. 94104

Ka Kui Lung
381 Bush Street
San Francisco, Ca. 94104

The Lurie Company
108 Sutter Street
San Francisco, Ca. 94104

Transamerica Title Insurance Co.
154 Sutter Street
San Francisco, Ca. 94104

Wafeth Corporation
246 Kearny Street
San Francisco, Ca 94108

Wells Fargo Bank
220 Kearny Street
San Francisco, Ca. 94108

Russ Building
235 Montgomery Street
San Francisco, CA 94104

Milton Meyer & Co.
1 California Street
San Francisco, CA 94111

Tiscornia Estate Co.
364 Bush Street
San Francisco, CA 94104

J.P. Cahill
Cahill Construction Company
425 California Street
San Francisco, CA 94104

LBF Associates
380 Bush Street
San Francisco, CA 94104

MEDIA

San Francisco Bay Guardian
2700 19th Street
San Francisco, CA 94110
Attn: Patrick Douglas, City Editor

San Francisco Chronicle
925 Mission Street
San Francisco, CA 94103
Attn: Mr. Marshall Kilduff
Mr. Allen Temko

San Francisco Examiner
110 Fifth Street
San Francisco, CA 94103
Attn: Mr. Gerald Adams

San Francisco Progress
851 Howard Street
San Francisco, CA 94103
Attn: Mr. Mike Mewhinney

The Sun Reporter
1366 Turk St.
San Francisco, CA 94115

LIBRARIES

Documents Department
City Library-Civic Center
San Francisco, Ca 94102
Attention: Faith Van Liere

Environmental Protection Agency Library
215 Fremont Street
San Francisco, CA 94105
Attn: Ms. Jean Circiello

Hastings College of the Law Library
198 McAllister Street
San Francisco, CA 94102

Golden Gate University Library
536 Mission Street
San Francisco, CA 94105

Government Documents Section
Stanford University
Stanford, CA 94305

Institute of Governmental Studies
1209 Moses Hall
University of California
Berkeley, Ca 94720

San Francisco Public Library
Main Branch Documents Section
208 Larkin Street
San Francisco, Ca 94102

San Francisco Public Library
Business Branch
530 Kearny Street
San Francisco, CA 94104

San Francisco State Library
Government Publications
1600 Holloway Avenue
San Francisco, CA 94132

Stanford University Library
Government Documents Section
Stanford, CA 94305

University of San Francisco
Gleeson Library
Golden Gate and Parker Avenues
San Francisco, CA 94115

# X. APPENDICES

## LIST OF APPENDICES

## APPENDIX A: FINAL INITIAL STUDY*

333 BUSH STREET

SAN FRANCISCO

81.4614E

March 1982

* Differences among data presented in the following Initial Study and the preceding Focused EIR are attributable to the availability of additional and more precise data during the subsequent preparation of the EIR.

DEPARTMENT OF CITY PLANNING 100 LARKIN STREET · SAN FRANCISCO, CALIFORNIA 94102
(415) 552-1134

# NOTICE THAT AN ENVIRONMENTAL IMPACT REPORT IS DETERMINED TO BE REQUIRED

Date of this Notice: March 5, 1982

Lead Agency: City and County of San Francisco, Department of City Planning
100 Larkin Street, San Francisco, CA. 94102

Agency Contact Person: Carol Roos Tel: (415) 552-1134

Project Title: 81.461E
333 Bush Street

Project Sponsor: Campeau Corporation California

Project Contact Person: Gary Mason

Project Address: 333 Bush Street

Assessor's Block(s) and Lot(s): 288, Lots 20, 21, 22, 23, 26, 28

City and County: San Francisco

Project Description:

Construction of a 38-story, 500-ft.-high combined office and residential building of 743,000 gross sq.ft., including about 507,500 gross sq.ft. of office space; 33,500 gross sq.ft. of commercial space; 48 condominiums; and 90 parking spaces; requiring Discretionary Review, Conditional Use authorization and a Variance.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15081 (Determining Significant Effect), 15082 (Mandatory Findings of Significance) and 15084 (Decision to Prepare an EIR), and the following reasons, as documented in the Environmental Evaluation (Initial Study) for the project, which is attached.

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: March 15, 1982.

An appeal requires 1) a letter specifying the grounds for the appeal, and 2) a $25.00 filing fee.

Alec S. Bash

Alec S. Bash, Environmental Review Officer



ER5 6/80

SAN FRANCISCO DEPARTMENT OF CITY PLANNING 100 LARKIN STREET · SAN FRANCISCO, CALIFORNIA 94102

FINAL
INITIAL STUDY

# 333 BUSH STREET
# SAN FRANCISCO

81.461E

March 1982

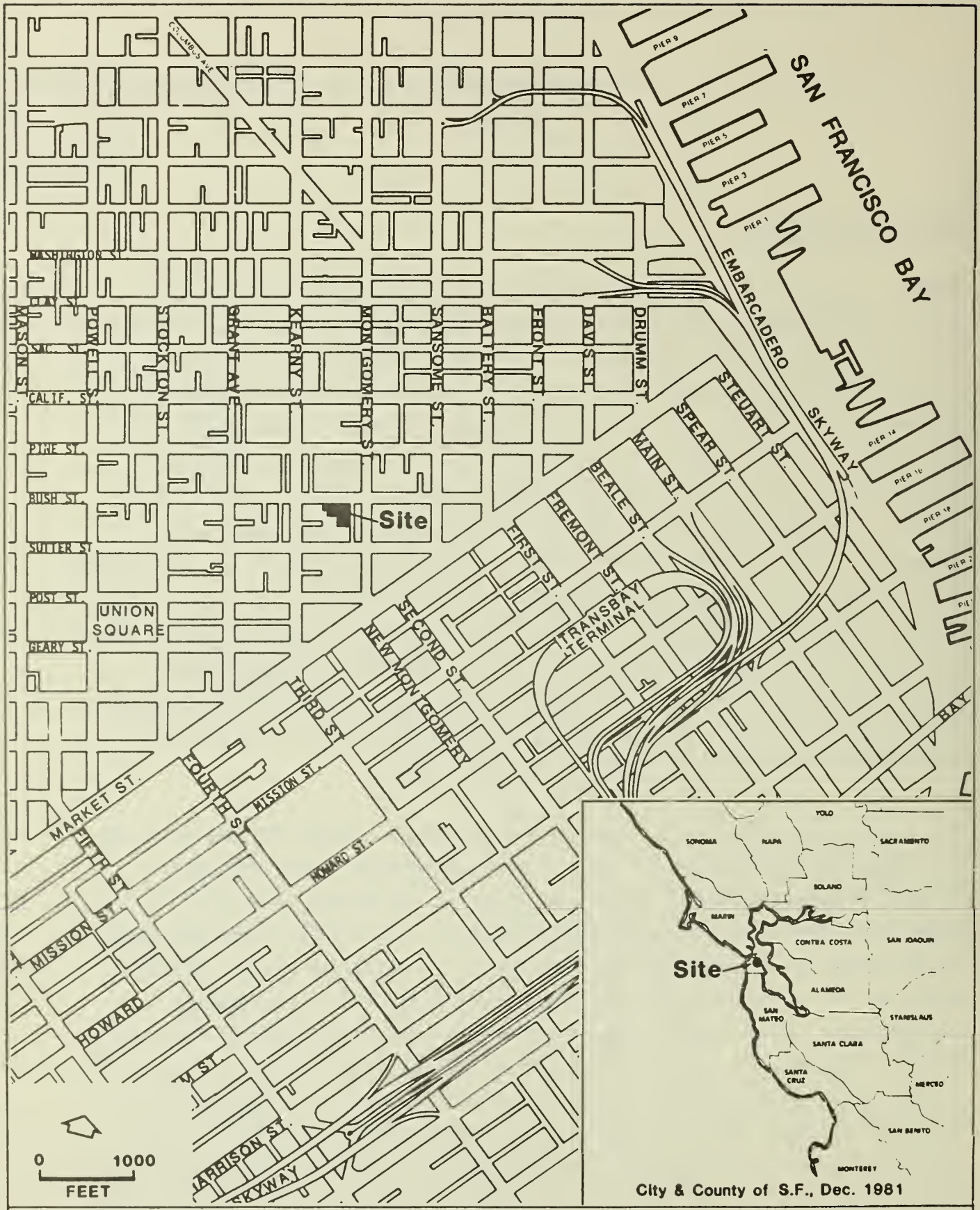
333 BUSH STREET

INITIAL STUDY
81.461E

PROJECT DESCRIPTION

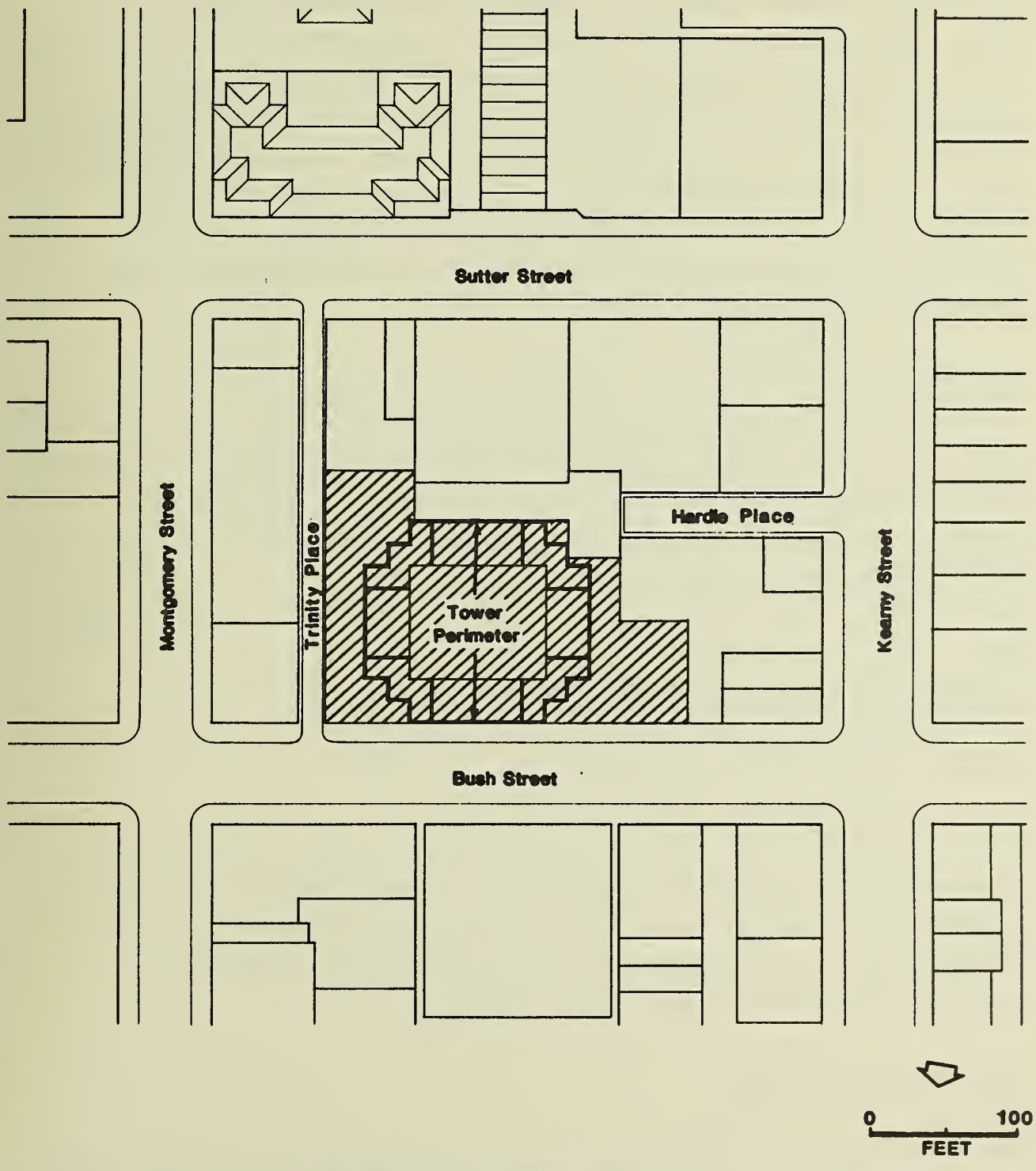
Campeau Corporation California proposes to construct a 38-story combined office and residential building on a portion of Assessor's Block 288 (Lots 20, 21, 22, 23, 26, 28) fronting Bush St. and Trinity Place. The project site is on the block bounded on the north by Bush St., on the south by Sutter St., on the west by Kearny St. and on the east by Montgomery St. (See Figures 1, 2, pp. 2 and 3.) The 31,590-sq.-ft. project site, is zoned C-3-O (Downtown Office) and is in a 500-I Height and Bulk district. Lot 26, at 25 Trinity Place, is occupied by a three-story brick building used for commercial purposes. Lot 23, at the corner of Bush St. and Trinity Place, is occupied by a four-story structure with a restaurant on the ground floor and office space above. The Jerome Building, on Lot 22, contains three stories of office space over street-level commercial space. Lot 21 is occupied by a four-story parking structure and Lot 20 by a seven-story parking structure with ground floor commercial space. Lot 28 contains a two-story office building. All buildings on the site are proposed to be demolished.

The project would be 500 ft. high and would contain a total 743,000 gross sq. ft. including 90,300 gross sq. ft. in three subsurface levels with about 90 parking spaces provided; 21,000 gross sq. ft. of street level commercial/retail and lobby space along Bush St. and Trinity Place and about 12,500 gross sq. ft. commercial/retail space in a mezzanine level; 507,500 gross sq. ft. of office space and 111,000 gross sq. ft. of residential condominiums. Four loading docks would be provided on the highest subsurface level. Entrances to the building would be through a main lobby on Bush St., a secondary entrance on Trinity Place, and stairs leading to the Garden Level; in addition, there would be numerous street level entries to retail spaces (see Figure 3, p. 5). The first story would form a base 244 ft. wide along Bush St. and 170 ft. wide along Trinity Place. The ground floor along Trinity Place would have retail space; on Bush St. the ground floor would be occupied by retail space, lobby areas and a vehicular access ramp. The ground floor




SOURCE: Environmental Science Associates, Inc.

**FIGURE 1: Site Location**




SOURCE: Skidmore, Owings & Merrill

FIGURE 2: Site Plan

would be about 22 ft. high, and would include a mezzanine level containing retail space with access from within the building; the rear portion of the mezzanine level would be occupied by mechanical systems. The net retail space in the ground and mezzanine levels would be about 13,000 sq. ft. An entry court and residential lobby would occupy the northernmost portion of the site. Above the ground floor would be the first tower floor, or Garden Level, which would contain commercial/retail space, and two public plaza areas accessable from Trinity Place, Bush St. and from within the building. Above this would be 27 floors of office space in a tower 152 ft. wide along Bush St. and 137 ft. wide along Trinity Place. The tower would be set back from Trinity Place and from existing buildings to the west. Above the office space would be a mechanical floor and eight floors of residential condominiums containing approximately 48 residential units.

Beginning at the Garden Level, the tower corners would be set back with vertical serrations rising 28 floors (see Figure 4, p. 6). Beginning on the 28th floor there would be setbacks which would create a symetrical narrowing of the tower on the residential floors. In addition to the open space provided at ground level and Garden Level public plaza areas, the project would include some terraces on the residential floors.

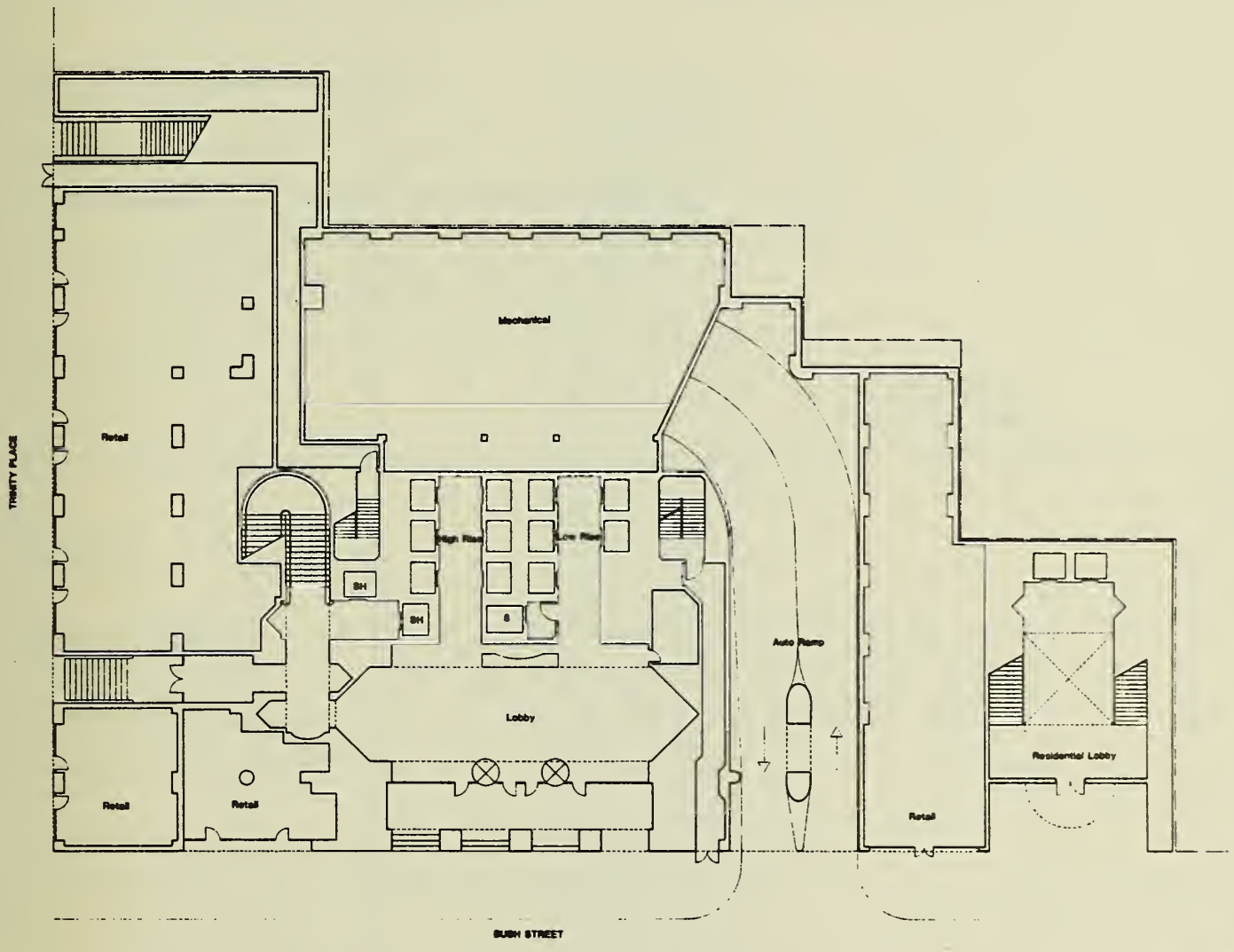
## SUMMARY OF POTENTIAL ENVIRONMENTAL EFFECTS

### EFFECTS FOUND NOT TO BE SIGNIFICANT

The proposed project at 333 Bush St. is examined in this initial study, in order to determine its potential effects on the environment. Some potential impacts were determined to be either insignificant, or would be mitigated through measures incorporated into the project design. These require no further environmental analysis. They include:

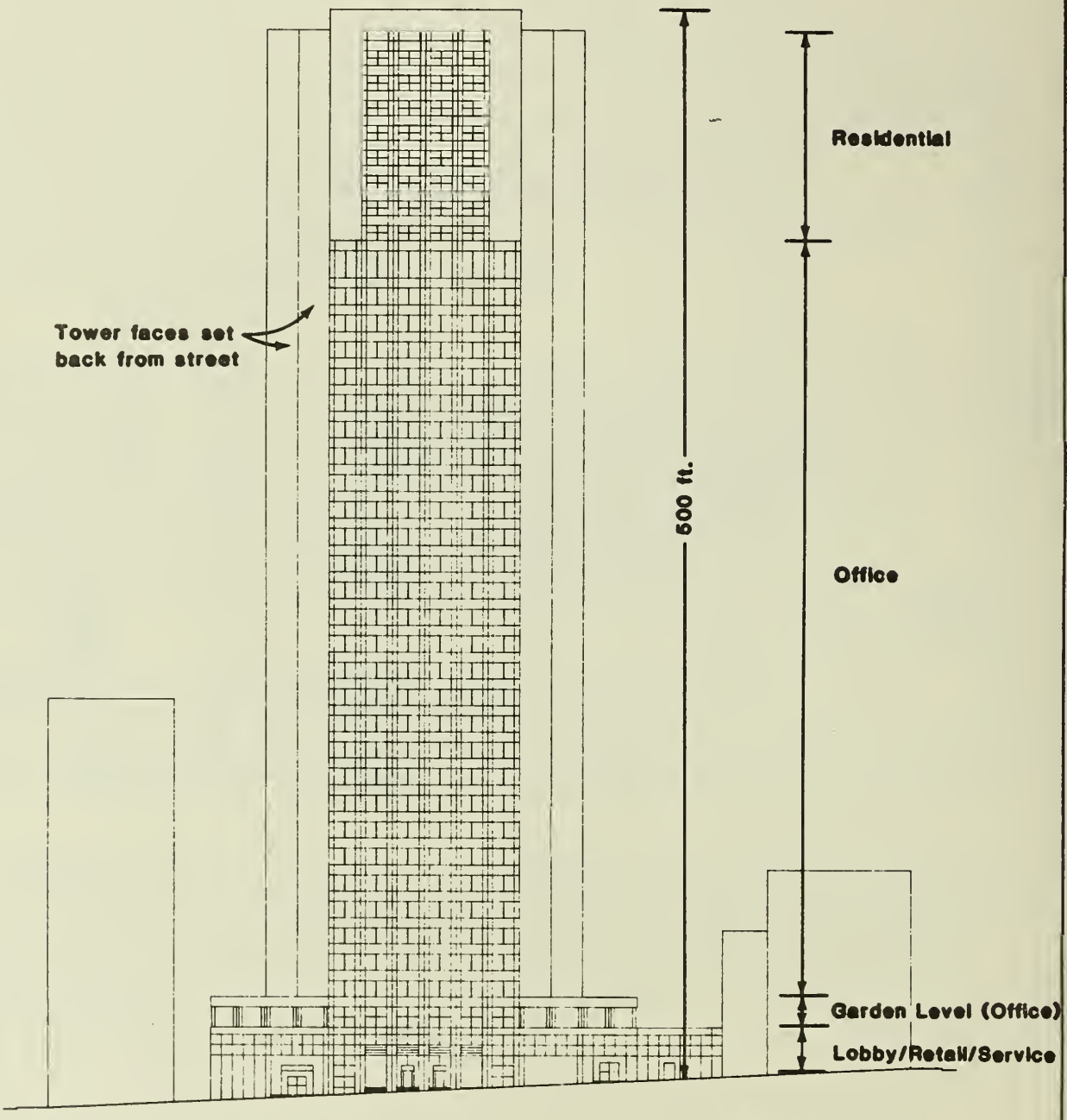
#### Land Use Compatibility

The project would be consistent with existing and proposed land uses in the vicinity of the site, except for the proposed on-site housing. Provision of housing on site will be discussed in the appropriate section(s) of the EIR.




**SOURCE: Skidmore, Owings & Merrill**

**FIGURE 3: Ground Floor Plan**




SOURCE: Skidmore, Owings & Merrill

FIGURE 4: Bush Street Elevation

Noise

After completion, the project would not increase audible noise levels in the project vicinity. The project would be designed to comply with noise insulation standards of Title 25 of the California Administrative Code.

Public Services and Utilities

The increased demand for public services and utilities attributable to the project would not require additional personnel or equipment. Water mains in Bush St. would be adequate to meet the water demand generated by the project and the existing water supply is adequate.

Biology

The project would have negligible effect on plant or animal life or habitat.

Hazards

The site and the project would neither cause nor be affected by hazardous uses or health hazards. See p. 30 for a measure to be implemented to insure coordination between the City's emergency planning activities and the project's emergency plan.

EFFECTS FOUND TO BE POTENTIALLY SIGNIFICANT

Some effects of the project have been determined to be potentially significant; these require further environmental analysis in an environmental impact report (EIR). These issues include the following:

Visual Quality and Urban Design

The project would obstruct some views from nearby buildings and contribute to increases in shadow and glare along Bush St.

Population, Employment and Housing

The project would displace approximately 150 employees from the site and attract approximately 2,400 upon completion. The new, permanent jobs in the project building would be expected to generate a demand for housing units in San Francisco and the Bay Area.

Transportation and Circulation

The project would increase Muni, auto and pedestrian trips to and from the site and the Downtown area and would eliminate an existing parking garage containing approximately 150 long-term and 210 short-term spaces.

Construction Noise

Project construction would cause noise levels to exceed those presently existing in the site vicinity, for approximately 28 months.

Air Quality

Construction of the proposed project would have short-term effects on air quality in the project vicinity. Residential hotel dwellers could be sensitive receptors to air pollutants during project construction.

Project operation would contribute to cumulative increases in concentrations of air pollutants in the San Francisco Bay Area, and would affect wind-speed ratios at street level.

Energy

The project would increase energy consumption on the site.

Cultural Resources

The project would require the demolition of a parking garage rated "B" in the Foundation for San Francisco's Architectural Heritage sponsored survey and "0" in the Department of City Planning Architectural Survey.

## DISCUSSION OF POTENTIAL ENVIRONMENTAL EFFECTS

| A. GENERAL CONSIDERATIONS | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|
| 1. Would the project conflict with objectives and policies in the Comprehensive Plan (Master Plan) of the City? | X | | | | X |
| 2. Would the project require a variance, or other special authorization under the City Planning Code? | X | | | | |
| 3. Would the project require approval of permits from City Departments other than DCP or BBI, or from Regional, State or Federal agencies? | | | X | | |
| 4. Would the project conflict with adopted environmental plans and goals? | | | X | | |

The project would respond to major provisions of the San Francisco Comprehensive Plan. It would provide office space in the Financial District, classified by the City Planning Code as the Downtown Office District (C-3-O) and described as "playing a leading national role in finance, corporate headquarters and service industries, and serving as an employment center for the region" (p. 105). The proposed project would comply with Objective 6 of the Commerce and Industry Element of the Comprehensive Plan to "maintain and improve San Francisco's position as a prime location for financial, administrative, corporate, and professional activity," and with policies to "maintain a compact downtown core" and to "provide adequate amenities for those who live, work and use Downtown." The project would be directly accessible, or close to, bus lines serving San Francisco (Muni), Marin (Golden Gate Transit), the East Bay (A-C Transit), and the Peninsula (SamTrans and

Muni connections to Southern Pacific commuter service), thereby encouraging the use of public transit. The project also would provide new housing "to help meet the demand for housing generated by downtown business expansion", a policy advanced by the Mayor in her Six-Point Program For Expanding Housing in San Francisco, April 9, 1981, and discussed in the Department of City Planning study document, Guiding Downtown Development, May 1981.

The project would require Conditional Use authorization under the provisions of Section 303 of the City Planning Code to utilize bonus provisions of Section 126, (Board of Supervisors Resolution No. 240-80) for the residential portion of the project. Concurrent Discretionary Review by the City Planning Commission is also required by its Resolution 8474 requiring such review of all projects in the Downtown area. The project would require a rear yard variance in this C-3-O district, for the residential portion of the building.

Prior to sale of the condominiums, the project sponsor must obtain approval of an application to subdivide the property pursuant to Sections 1303(c) of the Subdivision Code, Chapter XIII of Part II, San Francisco Municipal Code. The Subdivision Code requires that all subdivisions of 50 units or more provide a minimum of ten percent low- and moderate-income housing, provided that the City Planning Commission finds that governmental subsidies for such occupancy are available to the subdivider. There are currently no federal subsidies for low- and moderate-income housing available in San Francisco. However, San Francisco's Office of Housing and Community Development (OHCD) has developed a home ownership assistance program to provide low-cost financing to low- and middle-income families for the purchase of housing./1/

NOTES - General Considerations

/1/ Barbara Smith, Housing Specialist, Office of Community Development, telephone communication, October 1, 1981. At that date the OHCD anticipated funds would be available in 1982, and of this writing the funds have become available.

B. ENVIRONMENTAL IMPACTS

| | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|
| 1. Land Use. Would the proposed project: | | | | | |
| a. Be different from surrounding land uses? | X | ___ | ___ | ___ | X |
| b. Disrupt or divide the physical arrangement of an established community? | ___ | ___ | X | ___ | ___ |

The site is in the Downtown Financial District. The project would be similar in use to surrounding land uses and would not disrupt the physical arrangement of an established community. The project block contains office space above ground floor commercial uses, in buildings ranging from four to ten stories, with the exception of Lot 25, directly west of the site, which is occupied by a six-story residential hotel.

Lots 2, 3, 4, 5 and 6, along Montgomery St., across Trinity Place from the site, are the site of the 101 Montgomery St. building, a 28-story office building approved by the City Planning Commission in 1981 and now under construction. Across from the site, along Bush St., are a seven-story hotel, a two-story office building, a three-story office building, two vacant Lots, and a 16-story office building. All of these structures have ground floor commercial space. Because the 38-story project would be taller than immediately neighboring buildings, and because it would contain housing units and office space in one building, the project would differ from surrounding land uses.

| | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|
| 2. Visual Quality and Urban Design. Would the proposed project: | | | | | |
| a. Obstruct or degrade any scenic view or vista open to the public? | ___ | ___ | X | ___ | X |
| b. Reduce or obstruct views from adjacent or nearby buildings? | X | ___ | ___ | ___ | X |
| c. Create a negative aesthetic effect? | ___ | X | ___ | ___ | X |
| d. Generate light or glare affecting other properties? | ___ | X | ___ | ___ | X |

The proposed project would not obstruct any major scenic view or vista now available to the public. It would change views along the Bush St. view corridor. Views from the street along the Kearny and Montgomery St. corridors would not be affected. Long-range, existing views from the Hunter-Dulin Building at 111 Sutter St. (rated "A" in the Heritage Survey and "5" (on a scale of 1 (low) to 5 (high)) in the Department of City Planning Survey) from Kearny St. north of Bush St. would be blocked by the project.

The project would obstruct views over the site to the south, southwest and west now available from the upper floors of the Russ Building at 235 Montgomery St., the Mills Building at 220 Montgomery St., the Mills tower at 220 Bush St., the Alexander Building at 149-157 Montgomery St. and the 180 Montgomery St. building. Additional study of the effect of the project on both long-range and short-range views will be provided in an EIR for the project.

The project would affect the scale and building configuration of the project block. Some observers may consider replacement of existing buildings with a high-rise structure a negative aesthetic effect, while others might consider the project a unifying element, reinforcing the visual identity of the Bush/Montgomery Sts. intersection.

The project would result in a net increase in shadow along Bush St. The San Francisco Mining Exchange (rated "A" in the Heritage Survey and "3" in the Department of City Planning Survey) at 350 Bush St., across the street from the proposed project, would be in shadow in the afternoon throughout most of the year. Additional study of the effects of shadow cast by the project will be provided in an EIR.

The project would generate light from the office and residential floors when in use. Light generation probably would not affect surrounding buildings, but will be addressed in the project EIR, as will the possible effects of glare.

3. Population, Employment and Housing. Would the proposed project:

| | | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|---|
| a. | Alter the density of the area population? | X | | | | X |
| b. | Have a growth-inducing effect? | X | | | | X |
| c. | Require relocation of housing or businesses, with a displacement of people, in order to clear the site? | X | | | | X |
| d. | Create or eliminate jobs during construction and operation and maintenance of the project? | X | | | | X |
| e. | Create an additional demand for housing in San Francisco? | X | | | | X |

The proposed project would displace approximately 150 employees from the site during construction and would attract approximately 2,400 upon completion, a net increase of about 2,250 persons. No housing would be displaced.

As of December 1981, no existing tenant had specific relocation plans. Most would prefer to relocate in San Francisco, especially in the financial district. This matter requires further discussion in an EIR.

Person-years of construction labor and average number of construction employees are unknown at this time. Further discussion in an EIR is necessary.

New, permanent jobs in the project building would be expected to generate a demand for housing units in San Francisco and throughout the Bay Area. The project would include about 48 residential units. According to the Department of City Planning's housing demand formula, the project would cause a demand for 451 housing units in San Francisco./1/ This is 403 more than is proposed for the site. The extent to which the proposed units would help to meet the residential demand generated by the project will be discussed in further environmental analysis.

Assuming an employment multiplier of 1.18, the project's estimated net 1,970 office sector jobs would create about 2,300 additional, secondary jobs in the City's business services sector, and this could have a growth-inducing effect by attracting new residents to the City and Bay Area.

To the extent that the project would attract new residents or commuters who would not otherwise have been attracted to San Francisco or the Bay Area, it may be viewed as employment-generating and growth-inducing, resulting in a variety of indirect growth effects. The effects would include additional demand for housing, demands for a variety of commercial, social, medical, and municipal services, and secondary demands on streets, freeways, and transit systems. These issues will be discussed in the EIR.

NOTES Population, Employment and Housing

/1/ Housing demand was calculated using the formula provided by Guiding Downtown Development, Department of City Planning, May, 1981:

$$\frac{\frac{507{,}500 \text{ gross sq. ft.}}{250 \text{ sq. ft. per employee}}}{1.8} \times 0.40 = 451 \text{ housing units}$$

4. Transportation and Circulation. Would the construction or operation of the project result in:

| | | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|---|
| a. | Change in use of existing transportation systems? | X | | | | X |
| b. | An increase in traffic which is substantial in relation to existing loads and street capacity? | X | | | | X |
| c. | Effects on existing parking facilities, or demand for new parking? | X | | | | X |
| d. | Alteration to current patterns of circulation or movement of people and/or goods? | X | | | | X |
| e. | Increase in traffic hazards to motor vehicles, bicyclists or pedestrians? | X | | | | X |
| f. | A need for maintenance or improvement or change in configuration of existing public roads or facilities? | | | X | | X |
| g. | Construction of new public roads? | | | X | | |

The project would increase Muni and regional transit patronage and attract additional automobile trips to the site and the Downtown area. Pedestrian use of sidewalks may increase and will be examined in an EIR as will the project's effect on transit and traffic. Both project-related and cumulative impacts will also be addressed in an EIR. The project would eliminate an existing parking garage containing approximately 150 long-term and 210 short-term parking spaces. The effects of the project on long- and short-term parking, and its effects on parking in terms of expected cumulative development in the project area, require further analysis in an EIR.

5. Noise.

| | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|
| a. Would the proposed project result in generation of construction noise levels in excess of those currently existing in the area? | X | | | | X |
| b. Would existing noise levels impact the proposed use? | X | | | | X |
| c. Are Title 25 Noise Insulation Standards applicable? | X | | | | X |

Project Operation

Project operation would not audibly increase noise levels in the vicinity of the site. The amount of traffic generated by the project during any hour of the day would cause traffic noise levels to increase by less than 1 dBA, an increase that would be undetectable by the untrained human ear.

Vehicular access to the building site would be provided with ramps from Bush St. into the basement area. Loading docks for commercial deliveries would be located on basement level one; parking areas, primarily for the proposed residential units, are proposed for basement levels two and three. Such facilities would generate additional traffic, but increased noise levels would be inaudible due to existing noise levels on Bush St.

Mechanical equipment noise is regulated by the San Francisco Noise Ordinance, (Part II, Chapter VII, San Francisco Municipal Code), Section 2909, "Fixed Source Noise Level," with which the project sponsors are required to comply. The project site and surrounding area are zoned C-3-O. In this zone, the ordinance limits equipment noise levels to 70 dBA between 7 a.m. and 10 p.m. and 60 dBA between 10 p.m. and 7 a.m. at the property line. During lulls in traffic, mechanical equipment generating 70 dBA would dominate the site noise environment. As equipment noise levels would be limited to 60 dBA to meet the nighttime limit, they would not be audible within the sound-level context of the project. Further discussion in an EIR is not necessary.

As is typical of downtown San Francisco, the noise environment of the site is dominated by vehicular traffic noise. The Environmental Protection Element of the San Francisco Comprehensive Plan indicates a day-night average noise level (Ldn) of 75 dBA on Bush St. in 1974./1/,/2/ The Environmental Protection Element contains guidelines for determining the compatibility of various land uses with different noise environments. For residential and office uses the guidelines recommend no special noise control measures in an exterior noise environment up to an Ldn of 60 dBA for residential uses and 70 dBA for office uses. The exterior noise levels at the site are estimated to be 70 to 75 dBA. For these noise levels, the guidelines recommend an analysis of noise reduction requirements and inclusion of noise insulation features in the building design. The project will be designed in accordance with these guidelines for both residential and office uses and with Title 25 requirements. No further analysis is needed in an EIR.

Because the exterior noise environment of the site exceeds a CNEL/3/ of 60 dBA at street level, the project would require an acoustical analysis to show that it would comply with the interior CNEL requirement of less than 45 dBA with the windows closed. Because the project would be constructed to conform with Title 25 Noise Insulation Standards, existing noise levels would have no significant effect and no further discussion is required.

Project Construction

Project construction would require approximately 28 months and would involve demolition of existing buildings on the site, excavation, and construction of the proposed structure. These activities would temporarily cause noise levels

to exceed those presently existing in the site vicinity. The building foundation type has not yet been determined; it would probably be a mat foundation with spread footings. No pile driving is anticipated. The San Francisco Noise Ordinance limits noise emissions from any powered construction equipment to 80 dBA at a distance of 100 feet. A residential hotel adjoins the site on the west and residents could be affected by construction noise. Further consideration will be given to noise during construction in the EIR. Trucking activities to and from the site would not cause noticeable increases in average noise levels along haul routes, because of existing noise levels on the streets. .

NOTES - Noise

/1/ Ldn, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises (noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise).

/2/ dBA is the measurement of sound units in decibels (dB). The "A" denotes the A-weighted scale which simulates the response of the human ear to various frequencies of sound.

/3/ Community noise equivalent level (CNEL) is an averaged sound level measurement based on human reaction to cumulative noise exposure over a 24-hour period. The numerical values of CNEL and Ldn are essentially equal for most urban noise environments.

6. Air Quality/Climate. Would the proposed project result in:

| | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|
| a. Violation of any ambient air quality standard or contribution to an existing air quality violation? | X | | | | X |
| b. Exposure of sensitive receptors to air pollutants? | X | | | | X |
| c. Creation of objectionable odors? | | | X | | |
| d. Burning of any materials including brush, trees, or construction materials? | | | X | | |
| e. Alteration of wind, moisture, or temperature (including sun shading effects), or any change in climate, either locally or regionally? | X | | | | X |

Two types of air quality impacts could be expected from this project: short-term impacts from construction activity, and long-term impacts related to use and operation of the structure. Climatic conditions in downtown San Francisco allow rapid dispersal of air pollutants, so local stationary sources of emissions rarely create a measurable impact at monitoring stations. Rather, their impact is to add to regional accumulations of pollutants. Thus the project would probably not result in direct violation of any air quality standard, although it would contribute to existing violations.

Project Construction

Carbon monoxide and nitrogen oxide emissions would be generated from construction equipment and activities. Without mitigation, an estimated 20.3 tons of particulate would be generated during the 28-month construction period. Local concentrations of these emissions would depend upon particle size (for particulates), time of day, and microclimate conditions; particulate concentrations would likely often exceed the State 24-hour standard of 100 micrograms per cubic meter ($ug/m^3$). Concentrations of air pollutants are monitored by the Bay Area Air Quality Managment District (BAAQMD) at 900 23rd St., about 2.5 miles south of the project site. Ozone, carbon monoxide, nitrogen dioxide, and total suspended particulate (TSP) levels, as measured at the 23rd St. location, frequently exceed State and Federal standards. San Francisco currently is a nonattainment area for ozone, carbon monoxide, and TSP; and has been required to comply with Federal standards by 1987. The short-term impact of construction would not affect the City's compliance effort.

Project Operation

In contrast to construction, use of the building and related activities such as motor vehicle travel to and from the site would impede local efforts to attain and maintain air quality standards. Combustion of natural gas for space and water heating would generate small amounts of pollutants in the project area. Electrical energy consumption would place an increased demand on local generation plants, possibly resulting in greater emissions from these facilities. Local concentrations of carbon monoxide, hydrocarbons, and nitrogen oxides would increase as a result of increased traffic stimulated by the development. Individually, these incremental changes in air pollution in

the region would be insignificant; cumulatively, developments such as this could increase reported concentrations and the frequency of standard violations. Cumulative air quality issues will be examined in the EIR.

Sensitive receptors which could be affected by air pollution resulting from, or increased by, the proposed development would include individuals with health problems, certain industries such as horticulture, or fragile ecosystems. The sole pollutant deemed capable of directly affecting a sensitive receptor would be particulate emissions generated during construction; these emissions would be negligible at distances greater than a mile.

Residential hotel dwellers in the Hotel Stanford, located west of the site, could be sensitive receptors to air pollutants during project construction. This matter requires further discussion in the EIR.

The project would affect wind speeds at street level, probably increasing west wind speeds along Bush St. and Trinity Place. The project would create and cast new shadows on surrounding streets, plazas, and buildings. Wind and shadow studies examining these effects will be presented in the EIR.

7. Utilities and Public Services. Would the proposed project:

| | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|
| a. Have an effect upon, or result in a need for new or altered, governmental services in any of the following? | | | | | |
| - fire protection | ___ | ___ | X | ___ | X |
| - police protection | ___ | ___ | X | ___ | X |
| - schools | ___ | ___ | X | ___ | X |
| - parks or other recreational facilities | ___ | ___ | X | ___ | X |
| - maintenance of public facilities | ___ | ___ | X | ___ | X |
| - power or natural gas | ___ | ___ | X | ___ | X |
| - communications systems | ___ | ___ | X | ___ | X |
| - water | ___ | ___ | X | ___ | X |
| - sewer/storm water drainage | ___ | ___ | X | ___ | X |
| - solid waste collection and disposal | ___ | ___ | X | ___ | X |

The project would increase the building area and the number of persons using the site, and thus may increase the number of fire incidents at the site. The

project would, however, incorporate more extensive fire protection measures than most older structures in the area, and would comply with more stringent current fire protection codes. Existing water flows to the site for fire fighting are adequate and the project would not require additional personnel or equipment, except in the case of a major citywide disaster./1/

Proposed and approved cumulative development in Downtown San Francisco, consisting mostly of high-rise commercial office structures, would add about 8.9 million sq. ft. of gross floor area to the Downtown area by about 1990. It can be anticipated that the number of fire incidents would increase with the number of people occupying the district. Since new high-rise buildings must comply with the Life Safety provisions of the San Francisco Building Code, most fires in these buildings can be expected to yield to minimum response by the Fire Department. Since all of these buildings will be of Type 1 construction /2/, the chance of a fire spreading from building to building is relatively small. For example, when the old and highly combustible Produce Market was replaced by the high-rise buildings of the Golden Gateway Redevelopment Project, the external fire protection requirements of the Fire Department decreased./3/

The project would increase population and personal property on the site, thus increasing the potential for crime. The project would not require additional police personnel or equipment./4/ Appropriate mitigation measures (alarms, adequate lighting at entryways, security personnel would reduce the effects of the project on the police department. No further analysis is necessary.

Based on comparisons with similar types of housing, the project would probably have few school-age residents./5/ San Francisco schools could absorb any additional students generated by the project /6/. No further analysis is necessary.

The project would probably generate a demand for urban recreational facilities, such as plazas and city parks with benches, and clubs providing space for indoor sports. Union Square is four blocks southwest of the site and St. Mary's Square is two blocks northwest. The project would be designed to comply with Planning Code requirements for residential open space. In addition, there are approximately 15 indoor recreation/exercise facilities

within a ten block radius of the proposed project./7/ Restaurants are numerous in the area and at least one would be included in the project. The project would have no direct effect on the maintenance of public facilities. No further analysis is necessary.

The project would result in a net increase in the consumption of energy. The project would conform to California Energy Commission standards for residential and nonresidential buildings. The project would require a substreet transformer, probably located on Bush St. There would be no gas or electricity supply problems./8/ Energy consumption of the project will be analyzed in an EIR.

The project would result in increased use of telephone and other communication systems. Connections would occur from Bush St. and no supply or capacity problems are anticipated./9/ No further analysis is necessary.

The project would result in a net increase in water use at the site of about 60,000 gallons per day (gpd). Water mains in Bush St. would be of adequate size to serve the project./10/ Water supply has been determined to be adequate to serve the proposed uses./11/ No further analysis is necessary.

The amount of wastewater generated would be approximately the same as the amount of water used, as described above. Sewer mains serving the site would be adequate to handle increased sewer flows as well as storm drainage./12/ No further analysis is necessary.

The project would generate a net increase in solid waste. Adequate Collection services could be provided and would probably occur daily, as at present./13/ Disposal effects would depend on the eventual selection of a disposal method and/or site for San Francisco's solid wastes. No further analysis is necessary.

NOTES - Utilities and Public Services

/1/ Joseph A. Sullivan, Chief Support Services, San Francisco Fire Department, letter communication, September 18, 1981.

/2/ Type 1 buildings have structural elements made of reinforced concrete, reinforced grouted masonry, reinforced hollow concrete masonry or steel; and exterior walls, roofs, floors and some inner walls of "fire-resistive incombustible construction." San Francisco Building Code Section 1801.

/3/ Information contained in this section is from Bendix Environmental Research, Inc., Environmental Consultants and Fire Protection Engineers, confirmed by Emmet D. Condon, Deputy Chief, San Francisco Fire Department, September 25, 1981.

/4/ Officer Paul Libert, Planning and Research Division, San Francisco Police Department, telephone communication, September 15, 1981.

/5/ Laurel Anderson, Office Manager, Golden Gateway Commons; and Kathy Schmidt, Office Manger, Fox Plaza, telephone communications, December 14,1981. Golden Gateway Commons, a 50-unit complex, has approximately one school-age child, two pre-school-age children, and nine college-age residents. Fox Plaza, a 450-condominium complex, has a maximum of ten school-age children.

/6/ Robert Walker, Student Assignment Manager, San Francisco Unified School District, telephone communication, December 11, 1981.

/7/ Based on information from a survey of the 1981 Pacific Telephone Yellow Page Directory conducted by Environmental Science Associates, Inc.

/8/ Alfred Williams, Industrial Power Engineer, Pacific Gas and Electric Company, telephone communication, September 15, 1981.

/9/ Les Watson, Building Industry Consultant, Pacific Telephone, telephone communication, September 16, 1981.

/10/ Cy Westworth, Estimator, Engineering Department, San Francisco Water Department, telephone communication, September 15, 1981.

/11/ Jack Kenck, Manager, City Distribution Division, San Francisco Water Department, written communication, February 3, 1982.

/12/ Nathan Lee, Engineering Associate II, San Francisco Clean Water Program, telephone communication, September 15, 1981.

/13/ Fiore Garbarino, Office Manager, Golden Gate Disposal Company, telephone communication, September 15, 1981.

8. Biology.

| | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|
| a. Would there be a reduction in plant and/or animal habitat or interference with the movement of migratory fish or wildlife species? | ___ | ___ | X | ___ | ___ |

| | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|
| b. Would the project affect the existence or habitat of any rare, endangered or unique species located on or near the site? | ___ | ___ | X | ___ | ___ |
| c. Would the project require removal of mature scenic trees? | ___ | ___ | X | ___ | ___ |

The site is completely covered with impervious surfaces. The project would not effect any plant or animal life or habitat.

9. Land. (topography, soils, geology) Would proposed project result in or be subject to:

| | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|
| a. Potentially hazardous geologic or soils conditions on or immediately adjoining the site? (slides, subsidence, erosion, and liquefaction) | ___ | X | ___ | ___ | X |
| b. Grading? (consider height, steepness and visibility of proposed slopes; consider effect of grading on trees and ridge tops) | X | ___ | ___ | ___ | X |
| c. Generation of substantial spoils during site preparation, grading, dredging or fill? | X | ___ | ___ | ___ | X |

No site-specific soils analysis has yet been conducted for the site. Data pertaining to the site vicinity indicate over 120 ft. of fill, sands and old Bay mud overlie bedrock at the site./1/ The geologic materials are largely of low compressibility and are generally suitable for a foundation base. The first 17 ft. of fill material is generally unsuitable as a foundation base, as it is subject to compression and differential settlement under heavy building loads. A major seismic event could cause liquefaction with resultant lateral ground slippage. Recommendations from a geotechnical study of the site would be followed in the final design of the project.

Grading on the site would be related to foundation and basement preparation. The results would not be visible upon completion of the project.

Approximately 35,000 cu. yds. would be removed from the site as a result of excavation and disposed of in an officially approved disposal site, such as Sierra Point between Brisbane and South San Francisco in San Mateo County. A discussion of the potential geologic impacts of the project including grading and foundation design will be included in the EIR.

NOTES - Land

/1/ Woodward-Clyde Consultants, 1979, Geotechnical Investigation Interim Report, Crocker National Bank Building, Post and Kearny Sts., San Francisco, California, EE 78-298. A copy of this document is available for public review at the Department of City Planning, Office of Environmental Review, 45 Hyde St., San Francisco.

10. Water. Would the proposed project result in:

| | | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|---|
| a. | Reduction in the quality of surface water? | ___ | ___ | X | ___ | ___ |
| b. | Change in runoff or alteration to drainage patterns? | ___ | ___ | X | ___ | ___ |
| c. | Change in water use? | X | ___ | ___ | ___ | X |
| d. | Change in quality of public water supply or in quality or quantity (dewatering) of groundwater? | X | ___ | ___ | ___ | X |

The project would increase water use on the site by about 60,000 gallons per day (gpd). Water mains in Bush St. and existing water supply would be adequate to meet this demand./1,2/ The site is now covered with impervious surfaces. Thus, the project would not produce any changes in the quantity of runoff or in drainage patterns. Further analysis is not required. Dewatering may be required during construction. The geotechnical report under preparation will determine the groundwater level and make recommendations concerning dewatering and the recommendations will be followed. If dewatering is determined to be necessary, it will be analyzed in an EIR.

NOTES - Water

/1/ Cy Westworth, Estimator, Engineering Department, San Francisco Water Department, telephone communication, September 15, 1981.

/2/ Jack Kenck, Manager, City Distribution Division, San Francisco Water Department, written communication, February 3, 1982.

11. Energy/Natural Resources. Would the proposed project result in:

| | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|
| a. Any change in consumption of energy? | X | | | | X |
| b. Substantial increase in demand on existing energy sources? | | X | | | X |
| c. An effect on the potential use, extraction, conservation or depletion of a natural resource? | | X | | | X |

There would be an increase in energy consumption on the site as a result of the project due to the increase in the total square footage of structure to be served. As specific building designs have not been developed, any potential unnecessary, wasteful or inefficient uses of energy cannot be identified. The project would be required to comply with energy standards of Title 24 of the California Administrative Code.

There would be an increase in peak-hour electrical demand resulting from elevator use, in addition to the peak-hour demand characteristics of other uses in the structure. Other aspects of electrical and natural gas demand characteristics cannot be identified until more precise building designs are developed. Further evaluation in the EIR is necessary.

Shadows from the structure may reduce the feasibility of future active solar energy collection installations in some locations off-site. No existing active solar energy collection installations would beaffected as none are located in the immediate area north of the site. No other natural energy resources would be directly affected.

12. Hazards. Would the proposed project result in:

| | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|
| a. Increased risk of explosion or release of hazardous substances (e.g., oil, pesticides, chemicals or radiation), in the event of an accident, or cause other dangers to public health and safety? | | | X | | X |
| b. Creation of or exposure to a potential health hazard? | | | X | | X |
| c. Possible interference with an emergency response plan or emergency evacuation plan? | | | X | | X |

The site and the project would neither cause nor be affected by hazardous uses or health hazards. See p. 30 for a mitigation measure to be implemented to insure coordination between the City's emergency planning activities and the project's emergency plan.

13. Cultural. Would the proposed project:

| | | Yes | Maybe | No | N/A | Disc. |
|---|---|---|---|---|---|---|
| a. | Include or affect a historic site, structure or building? | X | | | | X |
| b. | Include or affect a known archaeological resource or an area of archaeological resource potential? | | | X | | |
| c. | Cause a physical change affecting unique ethnic or cultural values? | | | X | | X |

The project site contains a parking garage rated "B" by the Foundation for San Francisco's Architectural Heritage Survey and "0" by the San Francisco Department of City Planning Architectural Survey. Located at 355 Bush St., the six-story brick building is considered in the Heritage Survey to be representative of an early parking garage style in which the facade is designed to look like an office building. Under the plans for the project, this building would be demolished. Resolution 9248 of the City Planning Commission, dated November 19, 1981, recognizes the intent of the Director of Planning to recommend disapproval of any project proposing demolition of architecturally significant buildings. Landmarks Preservation Advisory Board policy applies equally to "A" and "B" rated buildings; that is, the Board does not distinguish between the two for preservation purposes. An alternative to the project which would preserve the garage will be included in the EIR.

The north side of Sutter St., on the opposite side of the block from the Bush St. frontage of the proposed project, is considered a unique block due to the architecture of existing structures which form a continuous streetscape. Similarly, Kearny St. between Sutter and Bush Sts. contains buildings of historic interest. The project sponsor is considering ways of contributing to the preservation of historic structures in the site vicinity. The project would dominate smaller-scale buildings by its greater height, and would cast

height, and would cast shadows, primarily northward across Bush St., during parts of each season of the year. Cultural and historic resources require further analysis in the EIR.

There are no known archeological resources on the project site. Experience with similar downtown sites inland of the original shoreline indicates that it is probable that no intact cultural or historic materials would be encountered, but scattered artifacts of historic interest could be found. The project sponsor would attempt to mitigate the effects of the project on any such find. An appropriate mitigation measure will be included in an EIR for the project, and no further analysis is required.

C. MITIGATION MEASURES

| | Yes | No | Disc. |
|---|---|---|---|
| Are mitigation measures included in the project? | X | | X |
| Are other mitigation measures available? | X | | X |

Mitigation Measures proposed as part of the project include the following:

Urban Design

- The project would include a sculptured upper-level facade designed to reduce the apparent scale and bulk of the building.

- The project would include pedestrian amenities including small, pedestrian-scale retail space; sidewalk areas designed to improve pedestrian access to work and shopping; and a streetscape design intended to contribute street-level visual amenity.

Transportation and Circulation

- The project sponsor would encourage transit use through the on-site sale of BART and Muni passes to employees.

- During the construction period the project sponsor would attempt to schedule project truck movement to minimize peak-hour traffic conflicts.

Noise

- The project would be designed in accordance with the guidelines contained in the Environmental Protection element of the Comprehensive Plan for both residential and office uses and will comply with Title 25 of the California Administrative Code regarding noise insulation for residential uses.

  The project contractor would muffle and shield intakes and exhausts, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as determined by the Department of Public Works.

Air Quality/Climate

- During excavation, unpaved demolition and construction areas would be wetted to hold down dust; watering the site at least twice a day with complete coverage, would reduce particulate emissions (dust) about 50 %.

- The general contractor would maintain and operate construction equipment in such a way as to minimize exhaust emissions.

Utilities And Public Services

- To reduce the demand on police protection services, the project would incorporate internal security measures which could include such features as a 24-hour staffed guard station in the lobby area, internal security personnel, well-lighted entries, alarm systems, and call-telephones for the residential portion of the building.

- The building would be equipped with a trash compactor to reduce the volume of solid waste requiring storage and transport. Separate storage facilities for recyclable waste material would be provided for both office and residential uses.

Land (Topography, Soils, Geology)

- A detailed foundation and structural design study would be conducted for the building by a California-licensed structural engineer and a California-licensed geotechnical consultant. The project sponsor would follow the recommendations of these studies during the final design and construction of the project.

- The project sponsor would require the project contractor and sub-contractors to obtain a Faithful Performance and Payment Bond, if proper financial capability is not evident, and to be responsible for any damage to existing buildings that might result from excavation.

- Excavation pit walls would be shored and protected from slumping or lateral movement of soils into the pit. Shoring and sheeting using soldier beams could be used for this purpose. The contractor would comply with the Excavation Standards of the California Occupational Safety and Health Agency (Department of Industrial Relations).

- The level of the water table and potential settlement and subsidence will be monitored by the general contractor. The City would require a lateral and settlement survey to monitor any movement or settlement of surrounding buildings and adjacent streets during the dewatering. Control lines and benchmarks would be established for monitoring horizontal and vertical movement.

- If, in the judgment of City engineers, unacceptable subsidence occurs during the construction, groundwater recharge would be used to halt the settlement. This might cause a delay in construction.

- Groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this is found necessary by the Industrial Waste Division of the Department of Public Works, to prevent sediment from entering the storm drain/sewer lines.

Energy

- Wherever possible, office suites would be equipped with individual light switches, time clock operation and fluorescent lights to conserve electric energy.

- The project would adhere to the guidelines of the (now withdrawn) Federal Energy Building Temperature Restrictions in the operation of heating, ventilating and air conditioning (HVAC) equipment. The HVAC system would be equipped with an economizer cycle to use outside air for cooling, as feasible.

- Whenever possible, the HVAC system would be designed to recycle waste heat to heat domestic water for office and residential use.

- Residential units would have individually metered gas and electric services.

- Residential and office water heating systems would be insulated to minimize water waste and waste heat. In residential units, water heaters would be placed as close as possible to the source of use (sinks, showers, dishwashers) to minimize water waste and waste heat.

Hazards

- An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to insure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before issuance by the Department of Public Works of final building occupancy permits.

Cultural Resources

- Should evidence of significant cultural or historic artifacts be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an expert archaeologist to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

Other mitigation measures may be developed and will be included in further environmental evaluation for the project.

| D. ALTERNATIVES | Yes | No | Disc. |
|---|---|---|---|
| Were other alternatives considered: | X | | X |

A range of alternatives are under consideration and will be examined in an EIR:

1. Guiding Downtown Development: An alternative (or alternatives) that conforms to the guidelines and recommendations of Guiding Downtown Development, published by the Department of City Planning, May, 1981;

2. Design Alternative: A design alternative which responds to impacts identified as potentially significant during the initial study process and preparation of the Preliminary Draft Environmental Impact Report;

3. Preservation Alternative: An alternative which would a) preserve the B-rated building on site and b) a site-specific, or off-site alternative which recognizes the historic resources on the site and in the vicinity including consideration of contributions to long-term protection of off-site historic resources;

4. Transportation Alternative: An alternative that would provide 360 parking spaces on site.

5. No Project: An alternative which considers: a) no project for the site; b) the same project on a different site; and, c) postponement of site development.

E. MANDATORY FINDINGS OF SIGNIFICANCE

| | | Yes | No | Disc. |
|---|---|---|---|---|
| 1. | Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal, or eliminate important examples of the major periods of California history or prehistory? | ___ | X | ___ |
| 2. | Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? | ___ | X | ___ |
| 3. | Does the project have possible environmental effects which are individually limited, but cumulatively considerable? | X | ___ | X |
| 4. | Would the project cause substantial adverse effects on human beings, either directly or indirectly? | ___ | X | ___ |
| 5. | Is there a serious public controversy concerning the possible environmental effect of the project? | ___ | X | ___ |

The project could contribute to cumulative environmental impacts, especially during project construction, as a number of projects are planned for the immediate vicinity. Cumulative effects including construction noise and impacts on traffic and pedestrian circulation require further analysis in an EIR. The project could have a cumulative effect on housing demand, transit systems and air quality. These issues require further analysis in the EIR.

DISTRIBUTION LIST - 333 BUSH STREET EE 81.461

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Evaluation and Planning
1800 15th Street
Sacramento, CA 95816
Attention: Mr. Don McElfresh

State Department of Transportation
(CalTrans) - District 4
Engineering Services Branch
150 Oak Street, Room 404
San Francisco, CA 94119
Attention: Mr. Robert Sieker

State Office of Intergovernmental Management
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, CA 95814
Attention: Ms. Anna Polvos

Governor's Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814
Attention: Heidi West

REGIONAL AGENCIES

Alameda-Contra Costa County Transit District
508 - 16th Street
Oakland, CA 94612
Attention: Mr. Don Larson

Association of Bay Area Governments
Hotel Claremont
Berkeley, California 94705
Attention: Mr. Charles Q. Forrester

Bay Area Air Quality Management District
939 Ellis Street
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Bay Area Rapid Transit District
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Attention: Ms. Barbara Neustadter

California Archaeological Site Survey
Regional Office
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600 Soquel Drive
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Golden Gate Bridge Highway & Transportation District
P.O. Box 9000, Presidio Station
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Attention: Mr. Dale W. Luehring

Metropolitan Transportation Commission
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San Mateo County Transit District
400 South El Camino
San Mateo, California 94402

Regional Water Quality Control Board
San Francisco Region
1111 Jackson Street, Room 6040
Oakland, CA 94607
Attention: Mr. Adam Olivera

Bureau of Building Inspection
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San Francisco Fire Department
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Attention: Mr. Joseph Sullivan,
Chief, Division of Planning
and Research

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Attention: Mr. Peter Straus

San Francisco Committee for
Utility Liaison on Construction
and Other Projects (CULCOP)
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100 Larkin Street
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Attention: Mr. Jonathan H. Malone

Mayor's Economic Development Council
552 McAllister Street
San Francisco, CA 94102
Attention: Mr. Richard Goblirsch

San Francisco Police Department
850 Bryant Street
San Francisco, California 94103
Attention: Sgt. Paul Libert,
Planning and Research Division

San Francisco Public Utilities
Commission
City Hall, Room 287
San Francisco, CA 94102
Attention: Mr. Richard Sklar

San Francisco Public Utilities
Commission
Bureau of Energy Conservation
949 Presidio Avenue, Room 111
San Francisco, CA 94115
Attention: Flint Nelson

San Francisco Real Estate Department
450 McAllister Street, Room 600
San Francisco, California 94102
Attention: Mr. Wallace Wortman,
Director of Property

San Francisco Unified School District
135 Van Ness Avenue, Room 209
San Francisco, CA 94102
Attention: Dr. Robert Alioto

GROUPS & INDIVIDUALS

AIA
San Francisco Chapter
790 Market Street
San Francisco, CA 94102

Bay Area Council, Inc.
348 World Trade Center
San Francisco, CA 94111

David Caprone
Lincoln Property Company
220 Sansome Street
San Francisco, CA 94104

Joseph Coriz
2853 22nd Street
San Francisco, CA 94110

Hunt Collins
c/o Home Savings
1730 South El Camino Real
San Mateo, CA 94402

Downtown Association
582 Market Street
San Francisco, CA 94194
Attention: Mr. Lloyd Pflueger

Downtown Senior Social Services
295 Eddy Street
San Francisco, CA 94102

John Elberling
177 Jessie Street
San Francisco, CA 94105

Environmental Impact Planning
319 Eleventh Street
San FRancisco, CA. 94103

Farella, Braun and Martel
235 Montgomery Street
San Francisco, CA 94104
Attention: Mr. Gene Bates

Friends of the Earth
124 Spear Street
San Francisco, California 94105
Attention: Ms. Connie Parrish

The Foundation for San Francisco's
Architectural Heritage
2007 Franklin Street
San Francisco, California 94109
Attention: Mr. Grant Dehart,
Executive Director

Grey Panthers
944 Market STreet
San Francisco, CA 94102

Gruen, Gruen & Associates
564 Howard Street
San Francisco, CA 94105

Heller, Ehrman, White &
McAuliffe
44 Montgomery Street
San Francisco, CA 94104
Attention: Mr. Robert Gibney

Ms. Sue Hestor
4536 - 20th Street
San Francisco, California 94114

Kaplan/Mclaughlin/Diaz
222 Vallejo Street
San Francisco, CA 94111
Attention: Mr. Herb McLaughlin

Chris Lavdiotis
1919 28th Avenue
San Francisco, CA 94116

League of Women Voters
12 Geary Street, Rm 605
San Francisco, CA 94108

Legal Assistance to the Elderly
944 Market Street, #803
San Francisco, CA 94118

Mr. Gerald Owyang
1517 Reed Avenue, #2
San Diego, CA 94118

Mrs. G. Bland Platt
339 Walnut Street
San Francisco, CA 94118

Charles Hall Page and Associates
364 Bush Street
San Francisco, CA 94104

San Francisco Beautiful
41 Sutter Street
San Francisco, California 94104
Attention: Mrs. H. Klussman,
President

San Francisco Building and
Construction Trades Council
400 Alabama Street, Room 100
San Francisco, California 94110
Attention: Mr. Stanley Smith

San Francisco Chamber of
Commerce
465 California Street
San Francisco, California 94104
Attention: Mr. Richard Morten

San Francisco Ecology Center
13 Columbus Avenue
San Francisco, CA 94111

San Francisco Junior Chamber of Commerce
251 Kearny STreet
San Francisco, CA 94104

San Francisco Labor Council
3058 - 16th Street
San Francisco, California 94103
Attention: Mr. Bernard Speckman

San Francisco Planning and Urban
Research Association
312 Sutter Street
San Francisco, California 94108
Attention: Mr. John Jacobs

San Francisco Convention &
Visitors Bureau
1390 Market Street, Suite 260
San Francisco, CA 94102
Attention: R. Sullivan, Manager

San Francisco Forward
690 Market STreet
San Francisco, CA 94104

San Francisco Tomorrow
728 Montgomery Street
San Francisco, CA 94111
Attention: Suzanne Smith

San Franciscans for Reasonable
Growth
9 First Street
San Francisco, California 94105
Attention: Mr. Carl Imperato

John Sanger & Associates
2340 Market Street
San Francisco, CA 94114

Senior Escort Program
South of Market Branch
814 Mission Street
San Francisco, Ca 94100
Attention: Neighborhood Coordinator

Kent E. Soule
1180 Filbert Street, #204
San FRancisco, CA 94109

Skidmore, Owings & Merrill
One Maritime Plaza
San Francisco, CA. 94111
Attention: Mr. Bob Towle

Sierra Club
530 Bush Street
San Francisco, California 94105
Attention: Ms. Becky Evans

San Francisco Forward
690 Market Street
San Francisco, CA 94105

Tenants & Owners Development Corp.
177 Jessie Street
San Francisco, CA 94105
Attention: John Elberling

Paul Thayer
1033 Stanyon
San Francisco, CA. 94217

Timothy A. Tosta
333 Market St., Suite 2230
San Francisco, Ca 94105

Steven Weicker
899 Pine St., #1610
San Francisco, CA 94108

ABUTTING PROPERTY OWNERS

Ms. Barbara G. Aaron
200 Kearny Street
San Francisco, Ca.

California Jones Co.
105 Montgomery Street
San Francisco, Ca. 94104

Campeau Corporation of California
681 Market Street, Suite 401
San Francisco, Ca. 94105
Attention: Grant Sedgwick;
Jeff Vance; Gary Mason

Edward J. Conner
130 Sutter Street
San Francisco, Ca. 94104

Edward D. Keil Trust
240 Kearny Street
San Francisco, Ca. 94108

Chester R. and Arla Konrad
260 Kearny St.
San Francisco, CA. 94108

Thea W. Lambertsen
126 Sutter Street
San Francisco, Ca. 94104

Ka Kui Lung
381 Bush Street
San Francisco, Ca. 94104

The Lurie Company
108 Sutter Street
San Francisco, Ca. 94104

Transamerica Title Insurance Co.
154 Sutter Street
San Francisco, Ca. 94104

Wafeth Corporation
246 Kearny Street
San Francisco, Ca 94108

Wells Fargo Bank
220 Kearny Street
San Francisco, Ca. 94108

Mr. Tim Tosta
Tim Tosta Law Corporation
333 Market Street, Suite 2230
San Francisco, CA 94105

Russ Building
235 Montgomery Street
San Francisco, CA 94104

Milton Meyer & Co.
334 Bush Street
San Francisco, CA 94104

Milton Meyer & Co.
350 Bush Street
San Francisco, CA 94104

Tiscornia Estate Co.
364 Bush Street
San Francisco, CA 94104

LBF Associates
380 Bush Street
San Francisco, CA 94104

MEDIA

San Francisco Bay Guardian
2700 19th Street
San Francisco, CA 94110
Attn: Mr. David Johnston

San Francisco Chronicle
925 Mission Street
San Francisco, CA 94103
Attn: Mr. Marshall Kilduff
Mr. Allen Temko

San Francisco Examiner
110 Fifth Street
San Francisco, CA 94103
Attn: Mr. Gerald Adams

San Francisco Progress
851 Howard Street
San Francisco, CA 94103
Attn: Mr. Mike Mewhinney

The Sun Reporter
1366 Turk St.
San Francisco, CA 94115

LIBRARIES

Documents Department
City Library-Civic Center
San Francisco, Ca 94102
Attention: Faith Van Liere

Environmental Protection Agency Library
215 Fremont Street
San Francisco, CA 94105
Attn: Ms. Jean Circiello

Hastings College of the Law Library
198 McAllister Street
San Francisco, CA 94102

Golden Gate University Library
536 Mission Street
San Francisco, CA 94105

Government Documents Section
Stanford University
Stanford, CA 94305

Institute of Govermental Studies
1209 Moses Hall
University of California
Berkeley, Ca 94720

San Francisco Public Library
Main Branch Documents Section
208 Larkin Street
San Francisco, Ca 94102

San Francisco Public Library
Business Branch
530 Kearny Street
San Francisco, CA 94104

San Francisco State Library
Government Publications
1600 Holloway Avenue
San Francisco, CA 94132

Stanford University Library
Government Documents Section
Stanford, CA 94305

University of San Francisco
Gleeson Library
Golden Gate and Parker Avenues
San Francisco, CA 94115

On the basis of this initial evaluation:

____ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

____ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers____, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

__✓__ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Robert W. Passmore
Assistant Director-Implementation

for

Dean Macris
Director

Date: 3/3/82

## APPENDIX B: ARCHITECTURAL EVALUATION SYSTEMS

The architectural ratings discussed in the text of this report (see Section III. C., Architectural and Cultural Resources pp. 40-42; and Figure 15, p. 41) represent the results of two separate architectural surveys.

### SAN FRANCISCO DEPARTMENT OF CITY PLANNING SURVEY

Between 1974 and 1976, the San Francisco Department of City Planning conducted a citywide inventory of architecturally significant buildings. An advisory review committee of architects and architectural historians assisted in the final determination of ratings for the 10,000 buildings which were entered in an unpublished 60-volume record of the inventory. The rated buildings are also represented on a set of color-coded maps which identify the location and relative significance of each building surveyed. The volumes and maps are available for public inspection at the Department of City Planning.

The inventory assesses the architectural significance of the surveyed structures from the standpoint of overall design and particular design features. Both contemporary and older buildings were included; historical associations were not considered. Each building is numerically rated according to its overall architectural significance, from a low of "0" to a high of "5". Factors considered include architectural significance, urban design context, and overall environmental significance. The architectural survey contains a listing of the best 10% of San Francisco's buildings. In the estimation of the inventory participants, buildings rated "3" or better represent approximately the best 2% of the City's architecture.

### HERITAGE SURVEY

More recently, the Foundation for San Francisco's Architectural Heritage, through its consultants, Charles Hall Page & Associates, Inc., conducted an

architectural and historical survey of all Downtown structures. In 1979, the inventory results were published in the book Splendid Survivors./1/ Criteria considered in rating the buildings included Architectural Significance, Historical/Cultural Significance, Environmental Significance and Negative Alterations. Summary ratings from "A" to "D" were then assigned to each building on the basis of these scores. The summary ratings indicate the following:

A. Highest Importance. Individually, these buildings are the most important buildings in downtown San Francisco. All "A" group buildings are eligible for the National Register and are of highest priority for City Landmark status.

B. Major Importance. This group includes buildings which are of individual importance by virtue of architectural, historical, and environmental criteria. "B" group buildings are eligible for the National Register and are of secondary priority for City Landmark status. The City Landmarks Board's policies do not distinguish between A and B rated buildings.

C. Contextual Importance. Buildings which are distinguished by their scale, materials, compositional treatment, cornice and other features are included in this group. Many "C" group buildings may be eligible for the National Register as part of historic districts.

D. Minor or No Importance. Buildings in this group are insignificant examples of architecture. Most "D" group buildings are "sites of opportunity" for development.

LISTING OF ARCHITECTURALLY AND/OR HISTORICALLY IMPORTANT BUILDINGS IN THE DOWNTOWN

Recognition of structures of architectural and/or historic importance is provided for under Section 101 of Article 10 of the City Planning Code, which authorizes the City Planning Commission to approve a list of buildings that have historical and architectural significance, but have not been designated

as landmarks. The purpose of such a list is to encourage preservation of these buildings without subjecting them to the controls imposed on designated landmarks.

In May 1978, the Planning Commission directed the Landmarks Preservation Advisory Board to prepare a list of potential buildings of architectural and/or historical importance for the Commission to consider. The Landmarks Board presented a list in September of 1979 containing 300 of the most architecturally and historically significant buildings in the Downtown area, including all buildings rated A or B in the Heritage Splendid Survivors survey, and any other buildings given high ratings in the Department of City Planning 1976 Architectural Inventory. The Planning Commission held two public hearings, in September 1979 and January 1980, and adopted the Listing of Architecturally and/or Historically Important Buildings on May 29, 1980 (Resolution 8600). As noted above, preservation policies of the Landmarks Board apply equally to both A and B rated buildings.

Buildings in the List of Architecturally Significant Buildings in the Downtown Area are indicated by double and triple asterisks in Figure 15, p. 41. Among those in the vicinity of the project are California Pacific Bldg., French Bank, Central Realty Bldg., Marston Bldg., Hallidie Bldg., Alto Bldg., Hunter-Dulin Bldg., Eyre (Argonaut) Bldg., McKay Bldg., Charleston Bldg., Russ Bldg., Mills Bldg. and Tower, and San Francisco Curb Exchange.

/1/ Charles Hall Page and Associates, Inc., Splendid Survivors, San Francisco's Downtown Architectural Heritage, California Living Books, 1979.

## APPENDIX C: WIND-TUNNEL STUDY/1/

### MODEL AND WIND-TUNNEL FACILITIES

Model: A 1:50 scaled model of the downtown San Francisco area surrounding the proposed building site for several blocks in all directions was provided by ESA, Inc. The model was capable of having two configurations (the existing and proposed settings) each available for separate wind-tunnel testing. Proposed and approved projects for 101 Montgomery, 466 Bush, and 222 Kearny Sts. were included in the study.

Wind-Tunnel Facilities: An environmental wind tunnel was built for testing natural atmospheric boundary layer flows past surface objects such as buildings and other structures. The tunnel has an overall length of 22 meters (m) (72 ft.), a test section of 1.22 m (4 ft.) wide by 1.83 m (6 ft.) high, and an adjustable false ceiling. Wind speeds within the tunnel can be varied from 1 to 4 meters per second (m/s) or 4.8 to 19.3 miles per hour (mph).

The atmospheric boundary layer flow over the downtown area was simulated by an upwind network of turbulence generators. The wind tunnel's false ceiling was adjusted to provide a zero-pressure-gradient downstream flow. The adjustment of the flow to zero-pressure-gradient flow is known to properly model atmospheric boundary layers near the surface of the earth. The long flow development length allows a naturally turbulent boundary layer to develop and properly models the full-scale flow.

### TESTING PROCEDURE

The wind study was divided into two parts: flow visualization and wind-speed measurements. The flow visualization observations were performed by injecting a continuous stream of smoke at various near-surface locations.

The subsequent motion of the smoke was recorded, and prevailing wind directions were determined. Wind- speed measurements were made at 20 surface locations using a hot-wire anemometer, an instrument that directly relates rates of heat transfer by electronic signals. The hot-wire signals are proportional to the magnitude and steadiness of the wind. Both the mean wind speeds and corresponding turbulence intensities were measured. Thus, high wind speeds and gustiness (large variable changes in wind speeds over short changes in time) could be detected. Hot-wire measurements made close to the surface have an inherent uncertainty of $\pm$ 5% of the true values.

Calibration measurements were made before and after each series of hot-wire experiments. The calibration was accomplished by means of a Thermo-System Incorporated (TSI) Model #1126 hot-wire anemometer calibrator especially designed for low-wind speeds. The calibration is accurate to $\pm$ 1%. The flow above the model was adjusted to nearly the same wind speed of 3.19 m/s (10.5 ft/sec or 7.14 mph) for all experiments. The ratio of near-surface speed to freestream wind speed was calculated from the hot-wire measurements and is presented on the attached figures.

Experiments were performed for 3 prevailing wind directions (westerly, northwesterly, and southwesterly) for the existing and proposed settings. These wind conditions are the most common in San Francisco, and are therefore the most representative for evaluation purposes. All hot-wire measurements were taken at the same series of surface points around the building site for all 3 wind directions and the 2 building settings.

## 3. TEST RESULTS AND DISCUSSION

The measured wind speeds are expressed as normalized percentages of the freestream wind-tunnel speed where 1.0 represents a wind speed equal to 100% of the freestream value. The numerical ratios (called wind speed ratios) displayed on the figures can be approximately interpreted by using the scale presented in Table C-1. The assessment of wind impact on the surrounding settings is preliminary and should be construed only as an estimate of the projected actual wind environment. The scale presented in Table C-1 is subjective.

TABLE C-1: RELATIVE INTENSITY OF SURFACE WINDS

| Intensity of Wind Speed | Wind Speed Ratio or Normalized Percentage of Freestream Speed |
|---|---|
| Low | 0.00 - 0.19 |
| Moderately low | 0.20 - 0.29 |
| Moderate | 0.30 - 0.49 |
| Moderately high | 0.50 - 0.69 |
| High | 0.70 - 1.00 |
| Very high | over 1.00 |

It should be noted that the plotted values are not actual wind speeds, but ratios. Thus, a point having "very high" wind speed could still experience light winds on a near-calm day. Likewise, a point found to have "low" wind speed could experience relatively high winds on a windy day.

West Wind

(i) Setting. The near surface wind speeds at the existing setting are low and moderately low (wind speed ratios of less than 0.19 and 0.29, respectively) at all measured locations. Other wind features that characterize the wind environment for the existing setting are: (a) Winds west of Kearny St. on Pine, Bush, and Sutter Sts. are easterly and they are created by a large recirculating wind flow that is formed off of the downwind (east side) of Nob Hill. (b) Moderately low winds are present on Bush St. directly north of the existing setting with a gusty (large variable changes in wind speeds over short changes in time) corner occurring at the T intersection of Trinity Place and Bush St. The gustiness is characterized by a change in wind speed ratios from 0.16 to 0.27 to 0.22 moving from west to east along Bush St. crossing Trinity St. (c) A large turbulent wake is created downwind of the Bank of America Headquarters Building which extends several blocks downwind of the building.

(ii) Impact of project. The proposed project would create the following changes in the wind environment: (a) Winds on Post St. west of Kearny St. would become unsteady and would change directions from west to east to west, continuously repeating the cycle. (b) More wind would be channeled along Bush St. directly north of the proposed building, creating a 69% increase in wind speed ratios from 0.16 to 0.27, thus increasing the wind from low to moderately low. Also, across Bush St. at the proposed Russ Tower, a 88% increase in wind speed ratios from 0.16 to 0.30 would occur. (c) There would be an effective 25% increase in wind speed ratios at the Bush-Montgomery Sts. intersection (the northeast corner would increase 25% from 0.20 to 0.25, the northwest corner would increase 19% from 0.27 to 0.32, and the southwest corner would increase 32% from 0.22 to 0.29). Winds on Bush St. east of Montgomery St. would increase 80% from a wind speed ratio of 0.15 to 0.27, thus increasing the wind from low to moderately low. (d) The gusty corner at the T intersection of Bush St. and Trinity St. would disappear, although the wind speed ratio would increase from 0.27 to 0.30, changing from moderately low to moderate.

An alternate setting was not tested.

Northwest Wind

(i) Setting. The near surface wind speeds at the existing setting are low and moderately low at all measured locations. Other wind features that characterize the wind environment are: (a) The Sutter-Montgomery Sts. intersection experiences a change in wind speed from low to moderately low from the northeast corner (wind speed ratio of 0.17) to the southwest corner (wind speed ratio of 0.29). This phenomenon is due to the partial turning of the wind onto Montgomery St. from Sutter St. at the southwest corner. (b) There are low unsteady winds (a rapid change in wind direction over short changes in time) occurring on Trinity Place between Bush and Sutter Sts. (c) A large turbulent wake is created downwind of the Bank of America Headquarters Building which extends several blocks downwind of the building.

(ii) Impact of project. The proposed project would create the following changes in the wind environment: (a) Easterly winds on Bush St. west of Kearny St. which are low in magnitude would be present, whereas the existing setting has westerly winds low in magnitude. (b) Northerly winds on Kearny St. at the Pine-Kearny Sts. intersection would occur in low magnitude, whereas the existing setting has southerly winds low in magnitude. (c) An effective 30-35% increase in wind speed ratios would occur along Sutter St. between Montgomery and Kearny Sts., but would still remain low in magnitude. (d) The unsteady winds on Trinity Place would disappear. Hence, all measured winds were low and moderately low with no substantial changes occurring in the wind environment when compared to the existing setting.

An alternate setting was not tested.

Southwest Wind

(i) Setting. The near surface wind speeds at the existing setting are low and moderately low at all measured locations except: (a) Moderate winds along Kearny and Montgomery Sts. (b) Moderate winds at the intersections of Sutter-Montgomery Sts., Sutter-Kearny Sts., Bush-Montgomery Sts., and Bush-Kearny Sts. There are moderately low unsteady winds occurring at the T intersection of Trinity St. and Bush St. The unsteadiness is characterized by a change in wind speed ratios from 0.13 to 0.26 to 0.14 moving from west to east along Bush St. crossing Trinity Place. A large turbulent wake is created downwind of the Bank of America Headquarters Building which extends several blocks downwind of the building.

(ii) Impact of project. The proposed project would create the following changes in the wind environment: (a) An increased wind flow along Kearny St. would create a 29% increase from a wind speed ratio of 0.31 to 0.40 at the Sutter St. intersection, thus creating moderate winds. However, due to the channeling of the wind on Kearny St. (mostly in the center portion of the street) there would be a decrease of 12% (from a wind speed ratio of 0.34 to 0.30) on the sidewalk area of the Hardie Place

intersection and a 21% decrease (from a wind speed ratio of 0.33 to 0.26) at the Bush St. intersection. (b) Also, due to the channeling of the wind on Kearny St., there would be a calm low wind occurring just north of the proposed project. (c) There would be a 27% decrease from a wind speed ratio of 0.26 to 0.19 in wind speed from moderately low to low at the T intersection of Trinity St. with Bush St. (d) There would be easterly winds on Bush and Sutter Sts. west of Kearny St., whereas the existing setting has westerly winds on these streets.

An alternate setting was not tested.

## IV. MITIGATION MEASURES

The two most severe undesirable changes in the wind environment due to the presence of the proposed building occur along Bush St. just north of the proposed building and at the Bush-Montgomery Sts. intersection, for the westerly wind; and, for the southwesterly wind, occur along Kearny St. which results in moderately low to moderate winds. Mitigating measures that should substantially reduce pedestrian discomfort along both Bush and Kearny Sts. would be the construction of small structures that could function as windbreaks along the sidewalks. They could include, but are not limited to, mature street trees, kiosks for newspapers, flower vendors, telephone booths, or low (10-15 ft. high) streetside planters along Bush and Kearny Sts. on the block of the proposed building.

An alternate building design that would have more streetside setback from Bush St. could also reduce the worsened wind environment on both Bush and Kearny Sts. An additional setback of 10-15 ft. could substantially lessen pedestrian discomfort.

/1/ This section is based on a study entitled "Wind Tunnel Studies of the 333 Bush St. Building", February 1982, by Dr. Bruce White, prepared under contract for Environmental Science Associates, Inc.

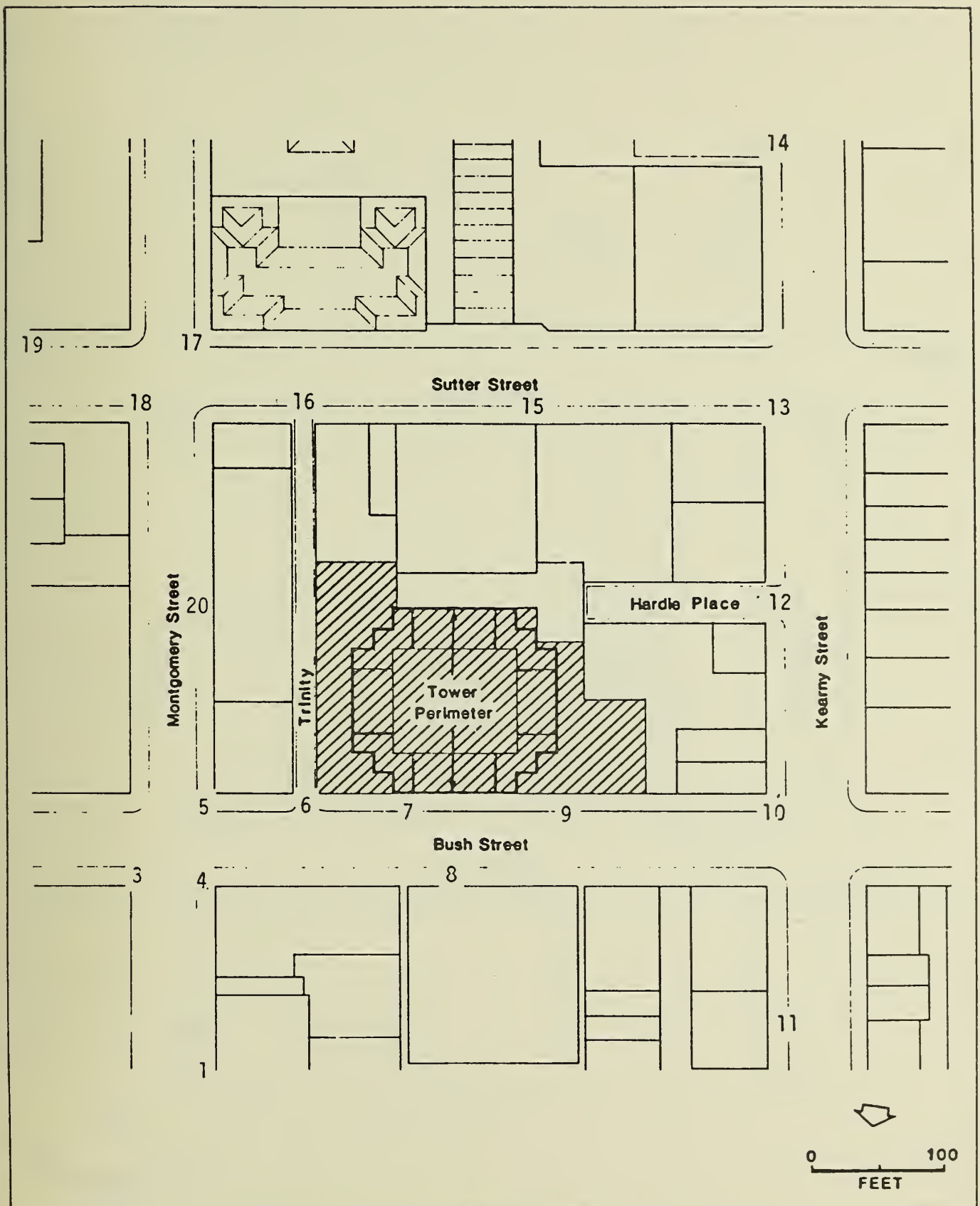
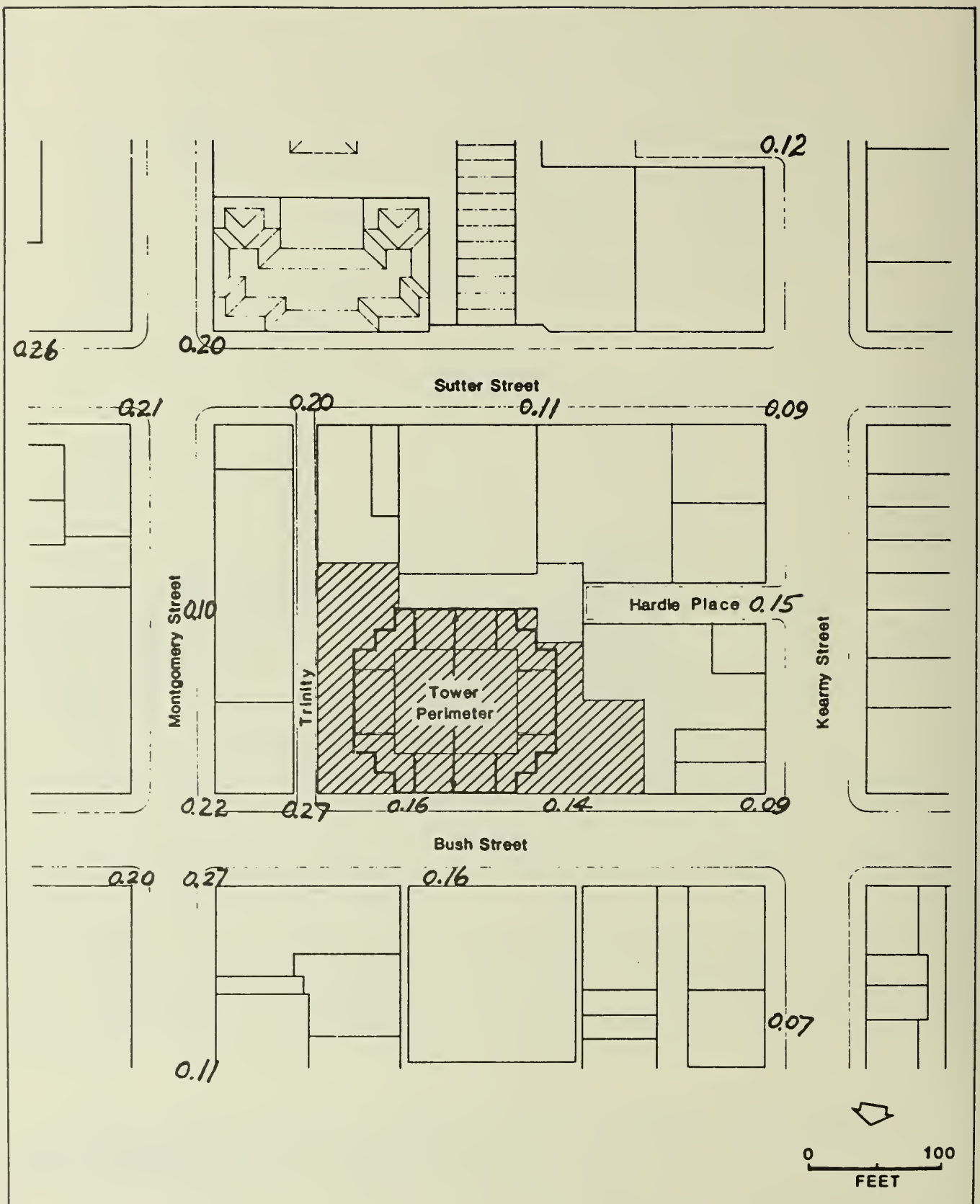



**FIGURE C-1: Location of Near Surface Position for Wind - Speed Measurements**

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.




15

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.

FIGURE C-2: Wind Speed Ratios for Westerly Winds - Existing

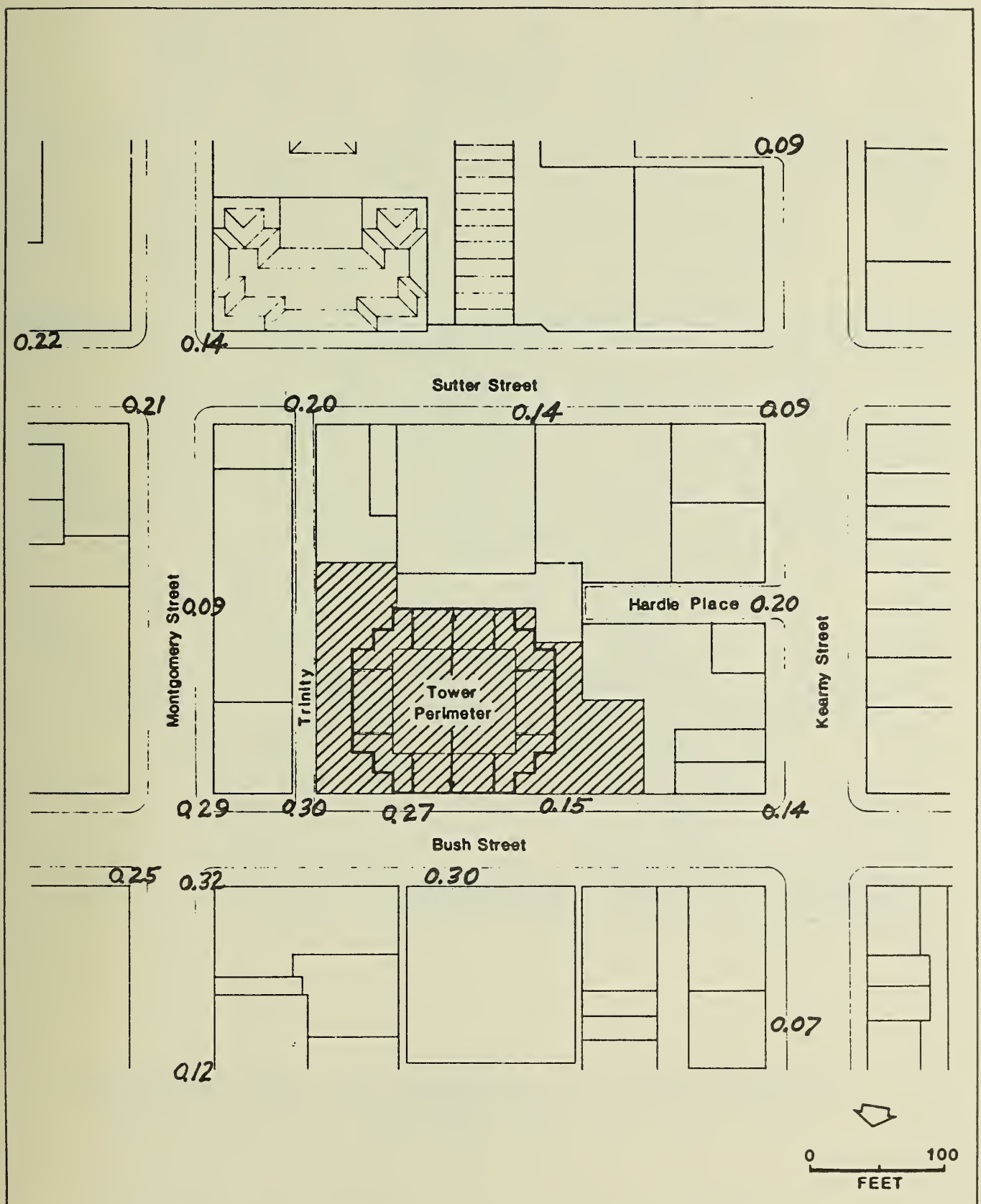



FIGURE C-3: Wind Speed Ratios for Westerly Winds - Proposed

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.

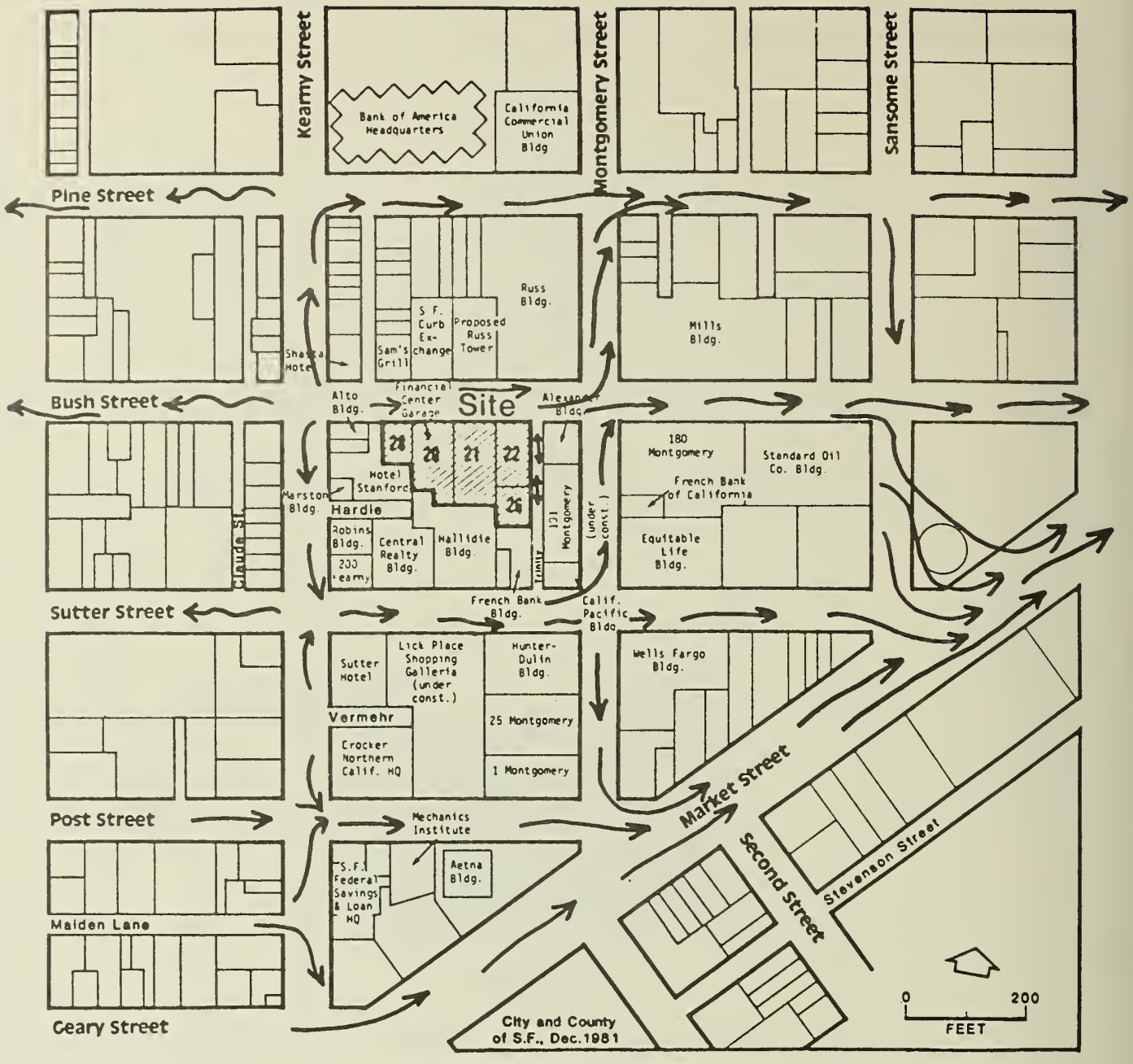



FIGURE C-4: Near Surface Wind Directions for Westerly Winds - Existing

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.

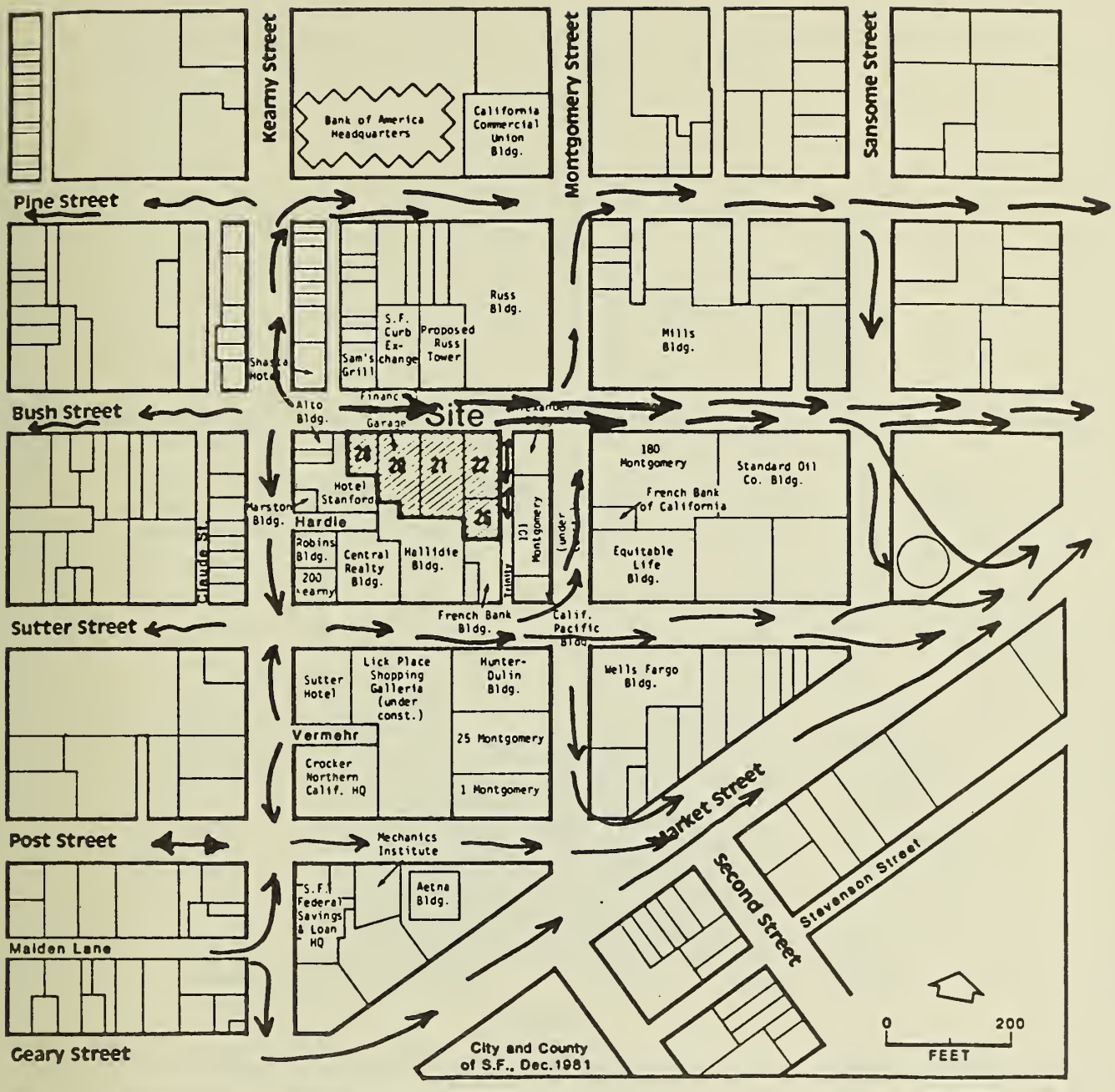
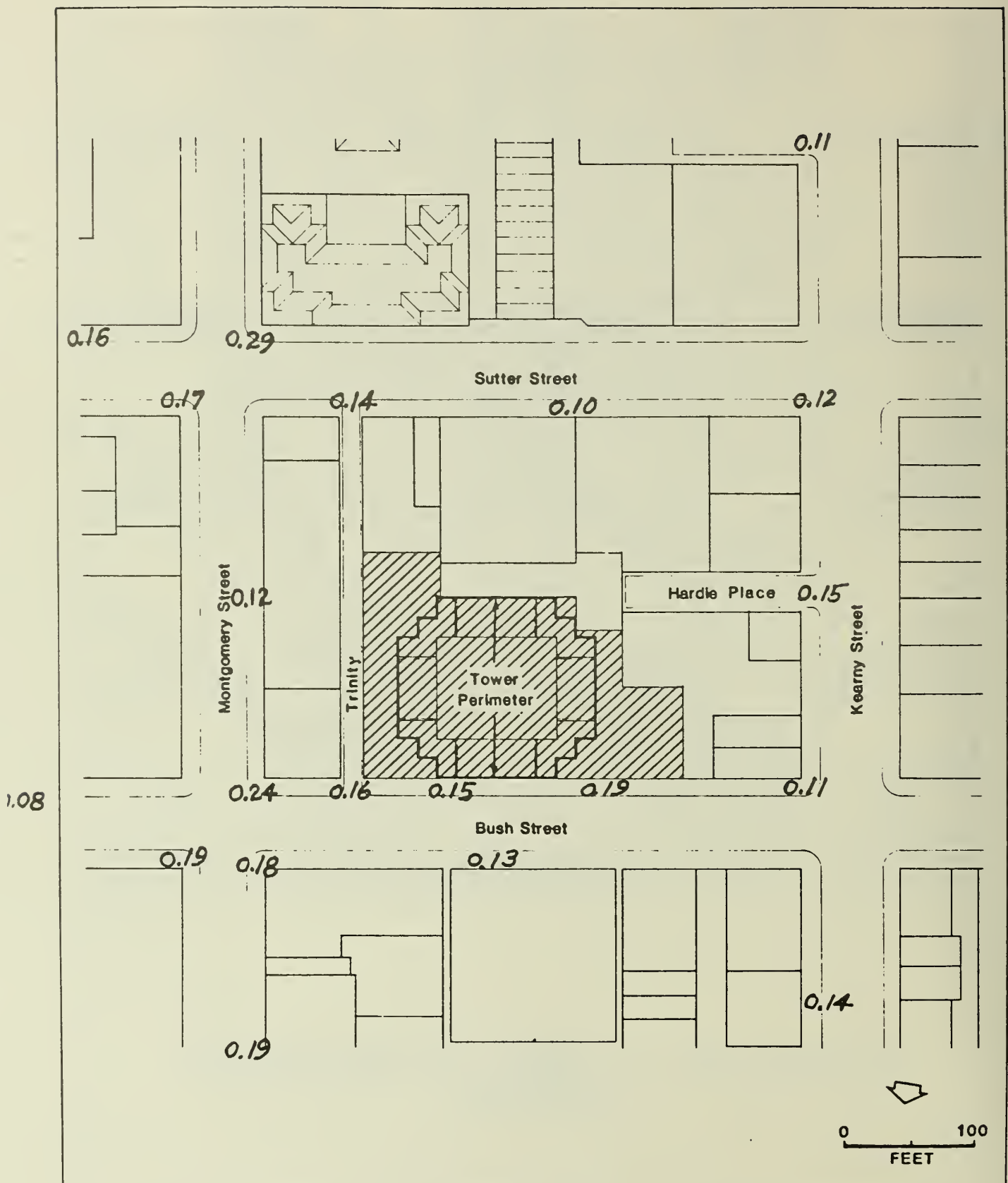


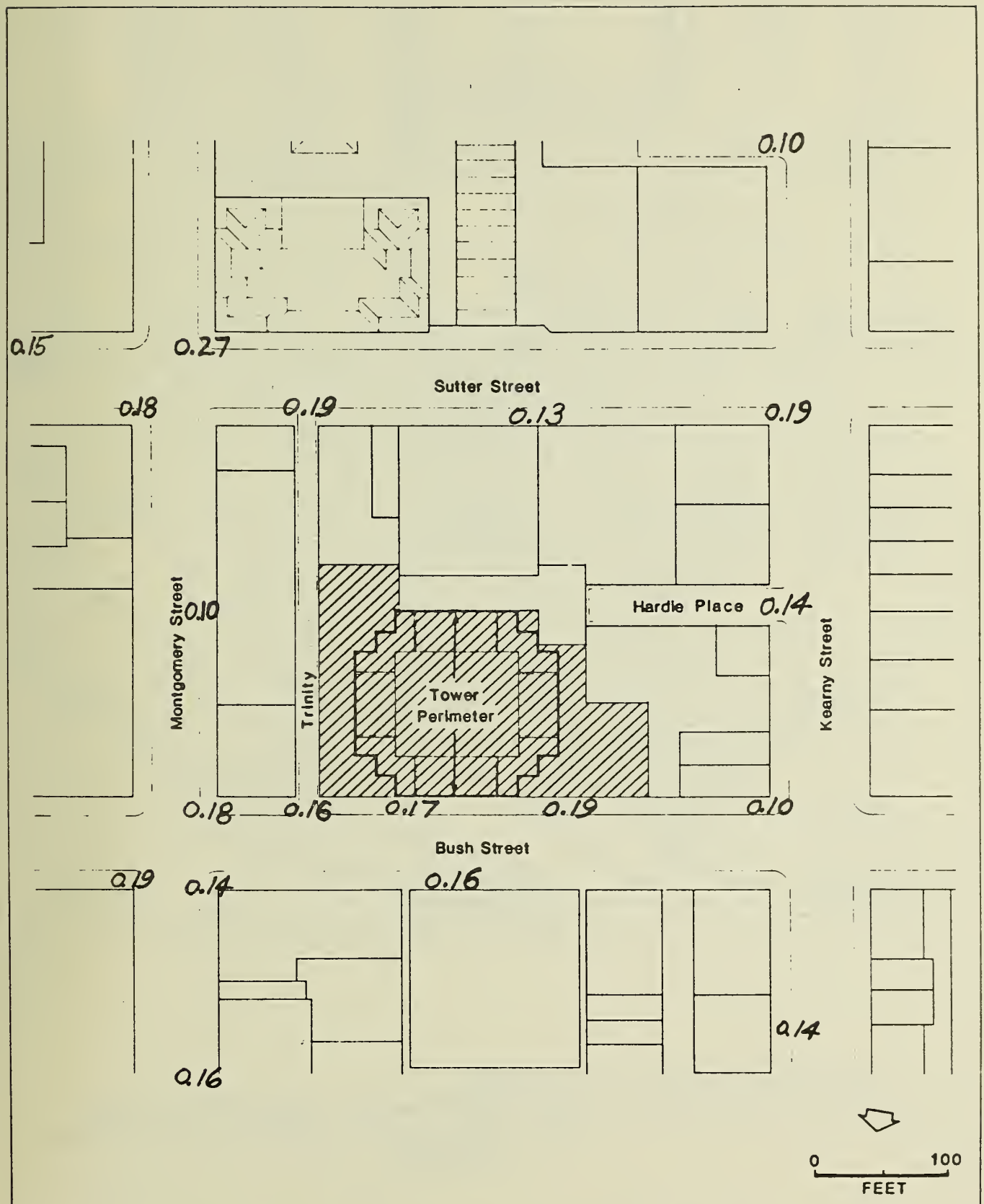

FIGURE C-5: Near Surface Wind Directions for Westerly Winds - Proposed

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.




SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.

FIGURE C-6: Wind Speed Ratios for Northwesterly Winds - Existing




SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.

FIGURE C-7: Wind Speed Ratios for Northwesterly Winds - Proposed

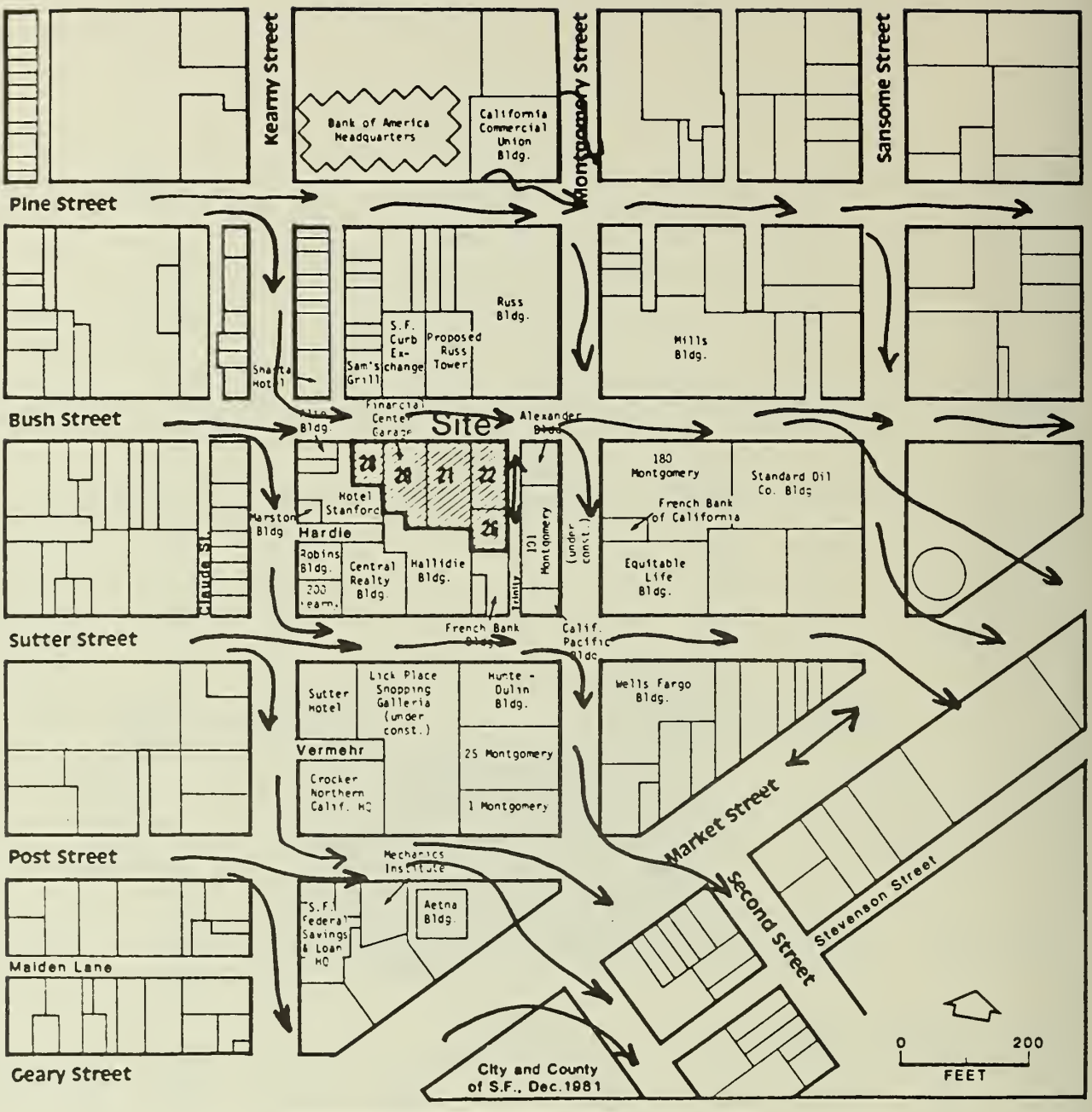



FIGURE C-8: Near Surface Wind Directions for Northwesterly Winds - Existing

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.

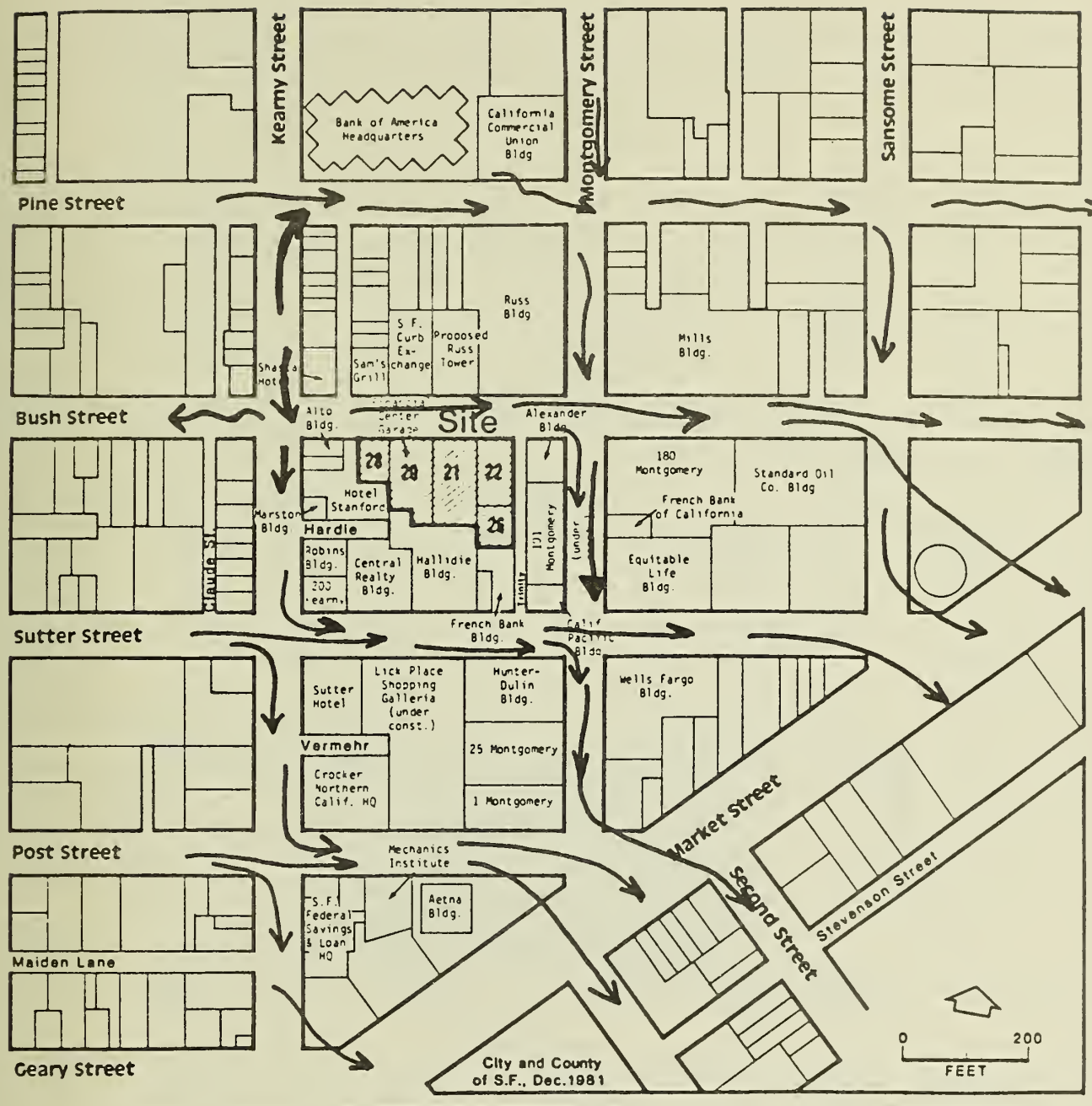
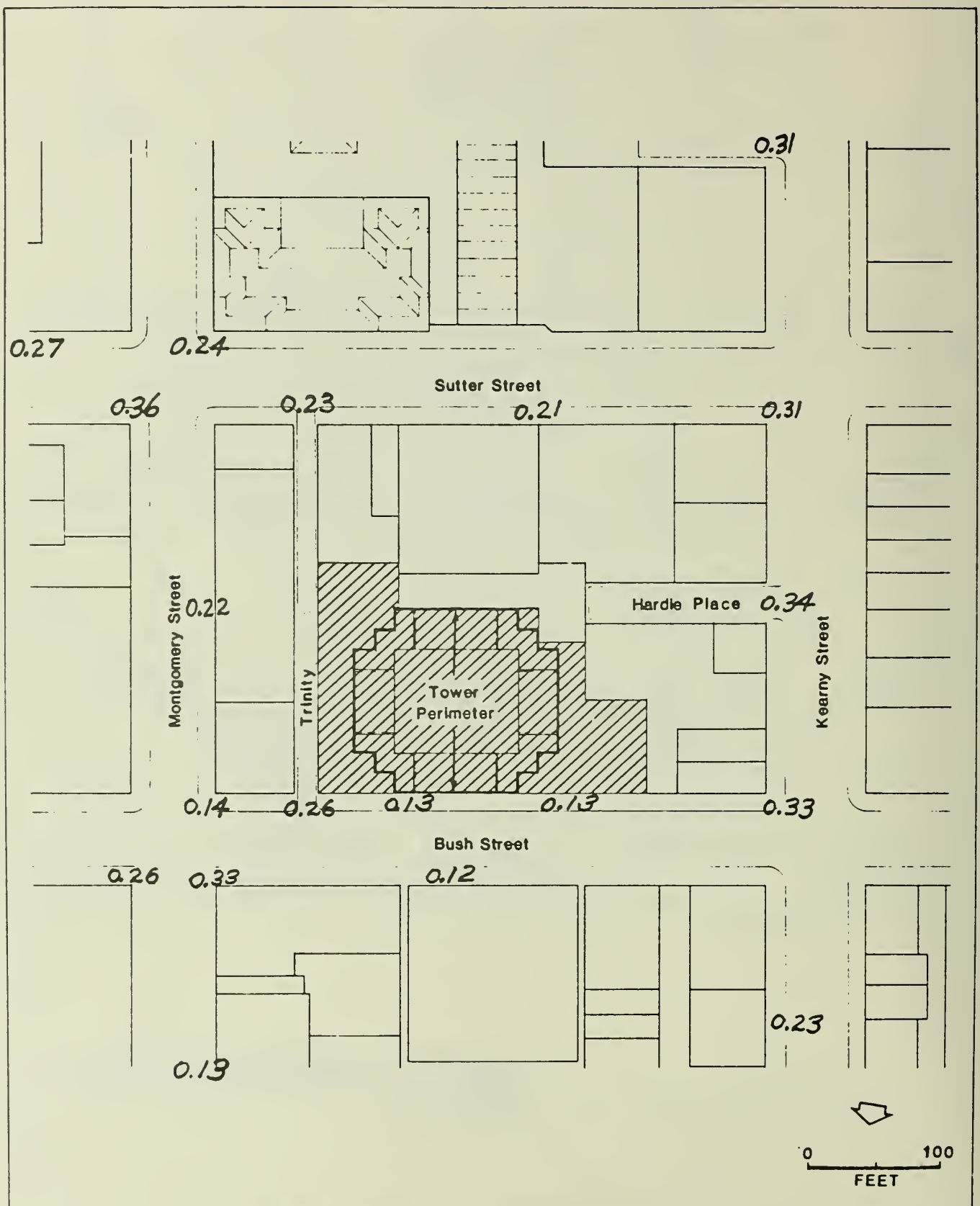


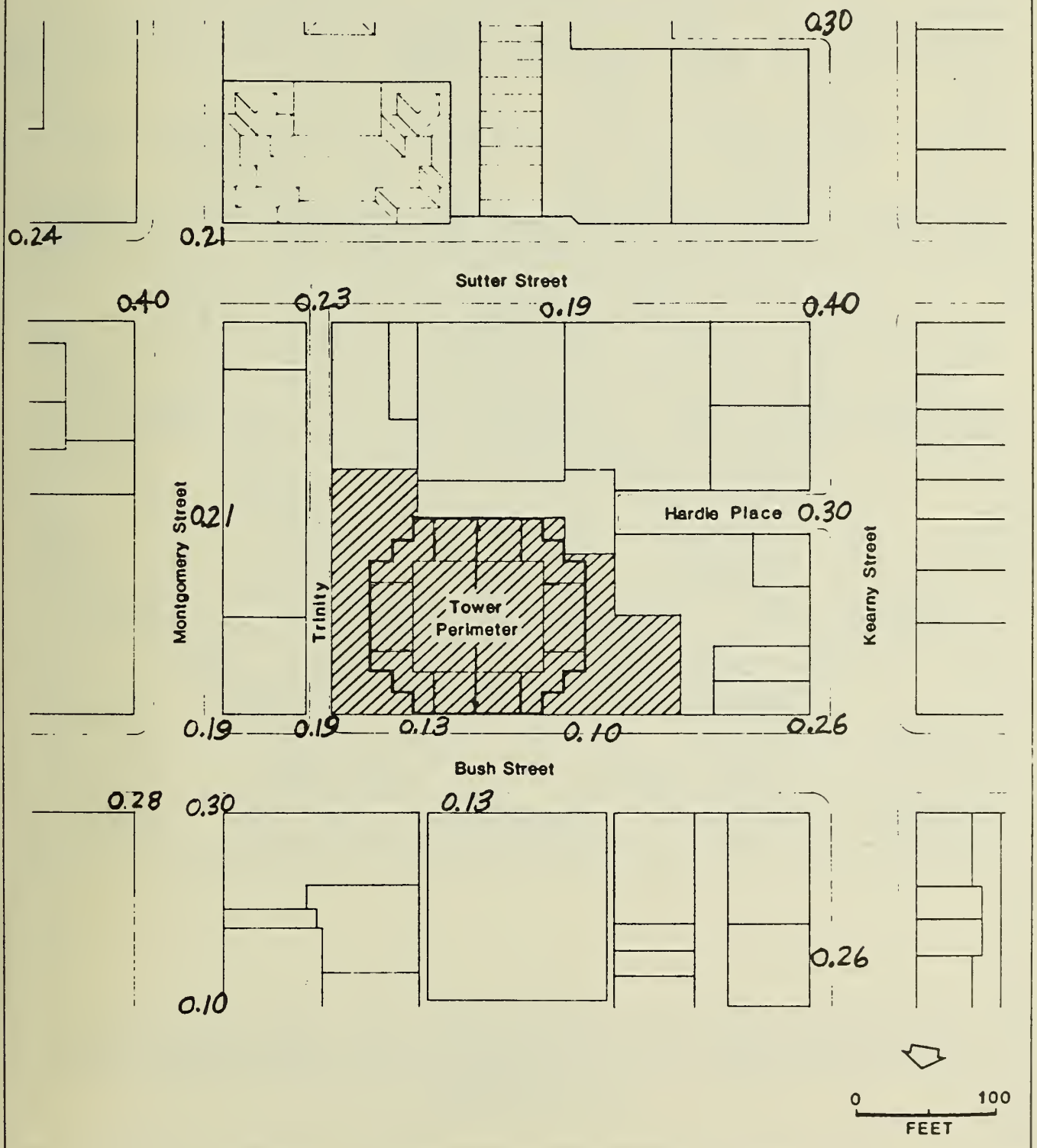

**FIGURE C-9: Near Surface Wind Directions for Northwesterly Winds - Proposed**

**SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.**




SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.

FIGURE C-10: Wind Speed Ratios for Southwesterly Winds - Existing




SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.

FIGURE C-11: Wind Speed Ratios for Southwesterly Winds - Proposed

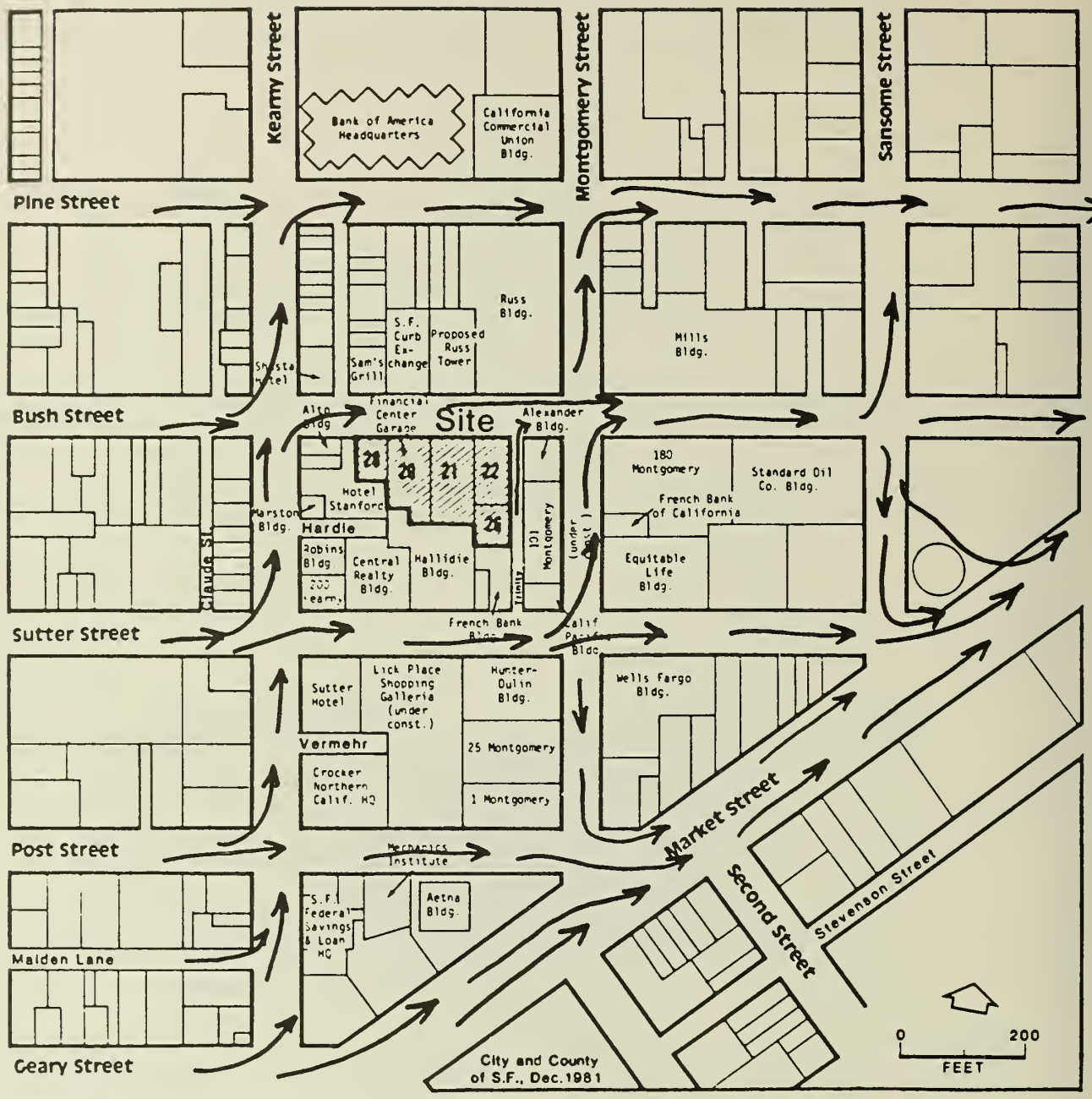



FIGURE C-12: Near Surface Wind Directions for Southwesterly Winds - Existing

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.

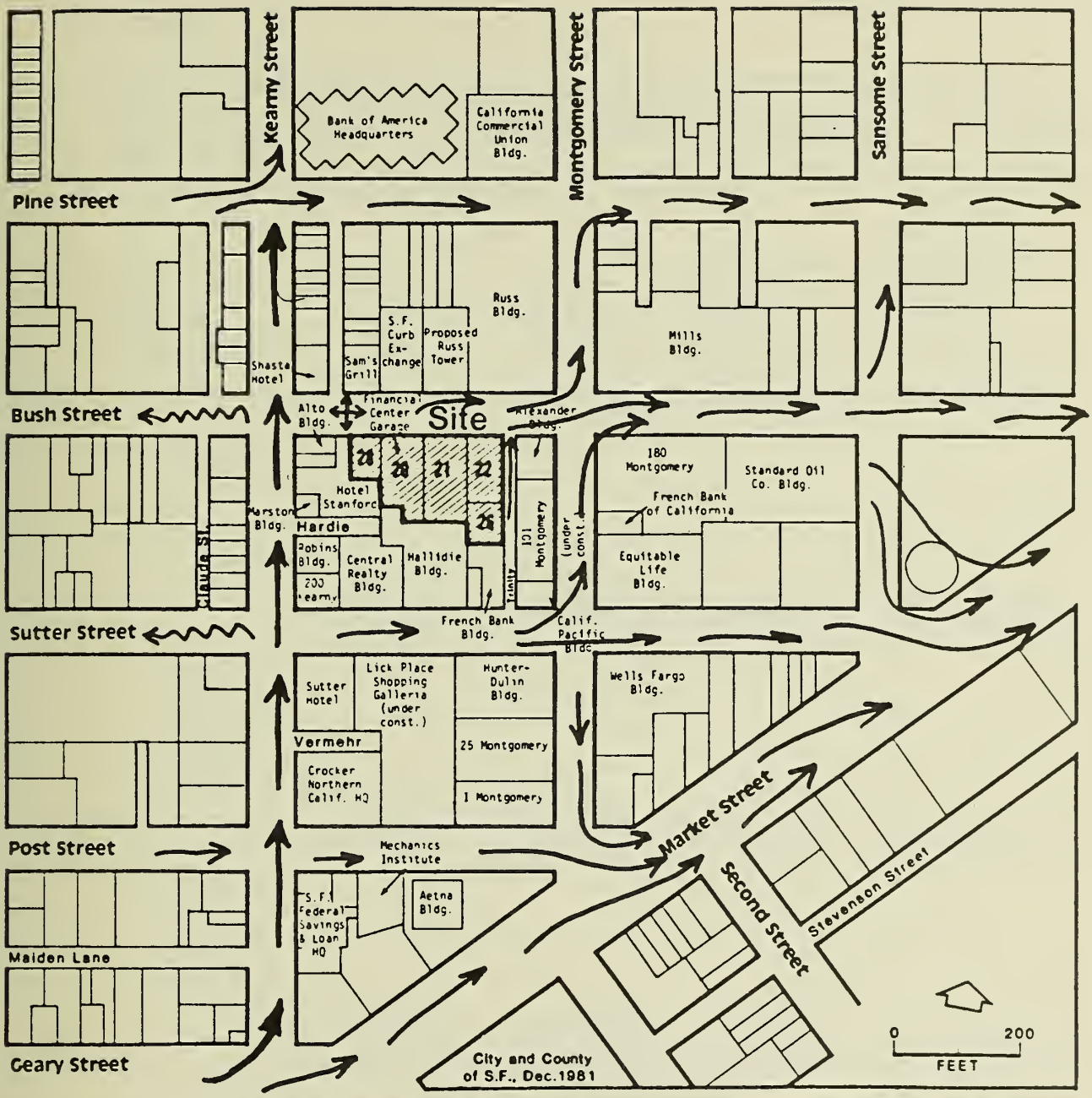



FIGURE C-13: Near Surface Wind Directions for Southwesterly Winds - Proposed

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.

# APPENDIX D: EMPLOYMENT AND HOUSING FACTORS

TABLE D-1: MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO THROUGH 1981 IN GROSS SQUARE FEET

| Year | Total Gross Sq. Ft. Completed | 5-Year Total | 5-Year Annual Average | Cumulative Total of All Office Buildings | Cumulative Total of All Downtown Office Buildings |
|---|---|---|---|---|---|
| Pre-1960 | | (Net)(a) | (Net)(a) | 28,145,000(b) | 24,175,000(c) |
| 1960 | 1,183,000 | | | | |
| 1961 | 270,000 | | | | |
| 1962 | -- | | | | |
| 1963 | -- | | | | |
| 1964 | 1,413,000 | | | | |
| | | 2,866,000 | 573,200 | | |
| 1960-1964 | | (2,580,000) | (516,000) | 30,725,000 | 26,754,000 |
| 1965 | 1,463,000 | | | | |
| 1966 | 973,000 | | | | |
| 1967 | 1,453,000 | | | | |
| 1968 | 1,234,000 | | | | |
| 1969 | 3,256,000 | | | | |
| | | 8,379,000 | 1,675,800 | | |
| 1965-1969 | | (7,541,000) | (1,508,000) | 38,266,000 | 34,295,000 |
| 1970 | 1,853,000 | | | | |
| 1971 | -- | | | | |
| 1972 | 1,961,000 | | | | |
| 1973 | 2,736,000 | | | | |
| 1974 | 2,065,000 | | | | |
| | | 8,615,000 | 1,723,000 | | |
| 1970-1974 | | (7,753,000) | (1,550,000) | 46,019,000 | 42,048,000 |
| 1975 | 536,000 | | | | |
| 1976 | 2,429,000 | | | | |
| 1977 | 2,660,000 | | | | |
| 1978 | -- | | | | |
| 1979 | 2,532,000 | | | | |
| | | 8,157,000 | 1,631,400 | | |
| 1975-1979 | | (7,341,000) | (1,468,000) | 53,360,000 | 49,389,000 |
| 1980 | 1,284,000 | | | | |
| 1981 | 3,029,000 | | | | |
| | | 4,313,000(d) | 2,156,500(d) | | |
| 1980-1981 | | (3,881,700)(d) | (1,940,850)(d) | 57,241,700 | 53,270,700 |

(Please see next page for footnotes)

TABLE D-1: MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO THROUGH 1982 IN GROSS SQUARE FEET (Continued)

(a) Net equals 90% of gross. Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building.
(b) Source: San Francisco Downtown Zoning Study, Working Paper No. 1, January 1966, Appendix Table 1, Part 1. For pre-1965, data include the area bounded by Vallejo, Franklin, Central Skyway, Bryant and Embarcadero. Also includes one-third of retail-office mixed use. For post-1964, data include the entire city.
(c) Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the cited January 1966 report. For post-1964, the entire area east of Franklin Street is included.
(d) Two-year total and average.

SOURCE: Department of City Planning, August 1, 1982

TABLE D-2: PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT ON REGIONAL HOUSING MARKETS, 1982-90

| | Net Project Demand in 1985 | Gross Cumulative Demand 1982 to 1990(c) | | Net Housing Stock Growth 1982-1990(d) | Demand as a Percent of Growth, 1982 to 1990 | |
|---|---|---|---|---|---|---|
| | No. Households | No. Emp. | No. Households | No. Units | Project | Cumulative |
| San Francisco (a) | 220 to 464 | 9,900 to 26,500 | 7,100 to 14,700 | 12,000 | 0.5 to 0.9 | 59.2 to 122.5 |
| Peninsula (b) (San Mateo and Santa Clara Counties) | 290 | 11,900 | 9,200 | 87,600 | 0.1 | 10.5 |
| East Bay (b) (Alameda and Contra Costa Counties) | 480 | 19,900 | 15,300 | 111,800 | 0.1 | 13.7 |
| North Bay (b) (Marin and Sonoma Counties) | 190 | 7,900 | 6,100 | 36,800 | 0.1 | 16.6 |
| TOTAL | 1,180 to 1,420 | 49,600 to 66,200 | 37,700 to 45,300 | 248,200 | 0.1 | 15.2 to 18.3 |

(a) Range of San Francisco employees and households based on 101 Montgomery Street Final EIR, EE 80.26, Certified May 7, 1981 (15-30% of all employees would reside in San Francisco and 1.4 workers would occupy each household) and "Office Housing Production Program (OHPP) Interim Guidelines," Department of City Planning, January 22, 1982 (40% of all employees would reside in San Francisco and 1.8 workers would occupy each household).

(b) Distribution of employees based on weighted average of expected employees in Federal Reserve Bank (EE 78.207), 101 California Street (EE 78.27), Pacific Gateway, (EE 78.61), and Crocker National Bank (EE 78.298), from 456 Montgomery Street Final EIR (EE 78.178) p. 167 (18% in the Peninsula, 30% in the East Bay, and 12% in the North Bay). Number of workers per household in these counties is assumed to be 1.3 based on 1980 Census data.

(c) Cumulative demand is based on a list of downtown office projects containing 50,000 gross sq. ft. or more and is available for public review at the Office of Environmental Review, 450 McAllister St., Fifth Floor, San Francisco. Total office space considered in this analysis was about 16.5 million gross sq. ft.

(d) Net housing stock growth based on "Projections 79," Association of Bay Area Governments, January 1980. Projections contained in this document for 1980-1990 were prorated to reflect 1982-1990 net housing stock growth.

SOURCE: Environmental Science Associates, Inc.

TABLE D-3: EXISTING USES AND EMPLOYMENT ON PROJECT SITE

| ADDRESS | TENANT | USE | EMPLOYEES |
|---|---|---|---|
| 315 Bush St. | Metropol | Restaurant | 25 |
| 321 Bush St. * | Real Estate | Office | 6 |
| | Financial | Office | 14 |
| | Miscellaneous | Office & Commercial | 9 |
| | Computer | Office | 10 |
| | Printing & Graphics | Office | 5 |
| | Attorney | Office | 7 |
| 323-329 Bush St. | Vacant | Commercial | 0 |
| 333 Bush St. | Salamugundi | Restaurant | 10 |
| 351 Bush St. | Financial Center Garage | Parking | 11 |
| 365 Bush St. | Northern Counties Insurance Co. | Office | 16 |
| 25 Trinity St. | Trinity Place | Restaurant | 25 |
| | | TOTAL | 138 |

* 321 Bush tenants in each category are as follows:

| | |
|---|---|
| Real Estate: | Associated Real Estate Services |
| Financial: | Dean Witter; Security Trust Co.; Peal Financial Corp. |
| Miscellaneous: | Elegant Nails by Carol, Windco Inc.; North American Slide Safety; Highland West Inc.; S.A. Khepra; Vincent Yeh and Co.; Services Inc. |
| Computer: | International Computer Technology; Word Processing; Systems Programming Ltd. |
| Printing/Graphics: | Annex Black and White Typesetting; The Graphics People. |
| Attorneys: | Roger S. Gross; Lawrence J. Koncz; L.Von Schottenstein. |

SOURCE: Environmental Science Associates, Inc.

## HOUSING AFFORDABILITY BY HOUSEHOLD INCOME

| Gross Annual Income Per Household or Per Individual | Maximum Affordable Monthly Housing Expenditure* | Housing Cost and Type of Unit | | | Source |
|---|---|---|---|---|---|
| | | Monthly Cost** | Type of Unit | (Price) | |
| $5,000 | $125 | | | | |
| 8,300 (a) | 208 | | | | |
| 10,000 | 250 | | | | |
| 10,680 | 267 | $267 - | Census Median Rent | | (e1) |
| 11,560 | 289 | 289 - | Studio Apartments | | (f1) |
| 15,000 | 375 | | | | |
| 18,200 | 455 | 455 - | Median Rent, All Units | | (f2) |
| 20,000 | 500 | | | | |
| 23,520 | 588 | 588 - | Rent, 3+ Bedroom Units | | (f3) |
| 25,000 (b) | 625 | | | | |
| 27,300 (c) | 683 | | | | |
| 30,000 (b) | 750 | | | | |
| 35,000 | 875 | | | | |
| 40,000 | 1,000 | | | | |
| 40,880 | 1,022 | 1,022 - | Lowest House Price | ($95,000) | (g1) |
| 45,000 | 1,125 | 1,125 - | Census Median Value | (104,600) | (e2) |
| 50,000 | 1,250 | | | | |
| 52,560 (d) | 1,314 | | | | |
| 55,000 | 1,375 | | | | |
| 65,080 | 1,627 | 1,627 - | Median House Price | (151,203) | (g2) |
| ↓ | | | | | |
| 101,880 | 2,547 | 2,547 - | Highest House Price | (236,750) | (g3) |
| ↓ | | | | | |
| 300,000 (d) | 7,500 | | | | |

See following page for references.

TABLE D-4: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME (continued)

* The Office/Housing Production Program (OHPP) Interim Guidelines (January, 1982) define affordable housing as follows:
rental expenses not exceeding 30% of gross monthly income, adjusted for family size; and home ownership expenses not exceeding 38% of gross monthly income, adjusted for family size, including mortgage payments, property taxes, insurance, and/or homeownership association dues.
For the purpose of this table, 30% of gross monthly income is used to calculate housing affordability for both renters and owners. For owners it is assumed that 8% of gross monthly income would cover property taxes, insurance, and/or homeownership association dues and other related expenses. No adjustment has been made for family size because family circumstances vary widely.

** Monthly housing costs refer to rents and mortgage payments for the housing prices shown in parentheses; sources of rents and house prices are as footnoted. Monthly costs of ownership housing were calculated as monthly mortgage expenses assuming 20% down payment, 30-year mortgage, and 16% interest rate, not including insurance, property taxes, and other related housing costs.

a. U.S. Bureau of Labor Statistics, March, 1981, "Area wage survey for the San Francisco-Oakland, California Metropolitan Area." $8,300 was the mean 1980 income of inexperienced file clerks, one of the lowest-paid office occupations listed.

b. The range of $25,000 to $30,000 is assumed to approximate the median annual income of project employees.

c. The $27,300 income figure was derived by inflating the $16,300 median income of downtown office workers from the 1974 SPUR survey through December, 1981 by 67% using U.S. Bureau of Labor Statistics national wage information for nonsupervisory finance, insurance, and real estate sector employees since 1974.

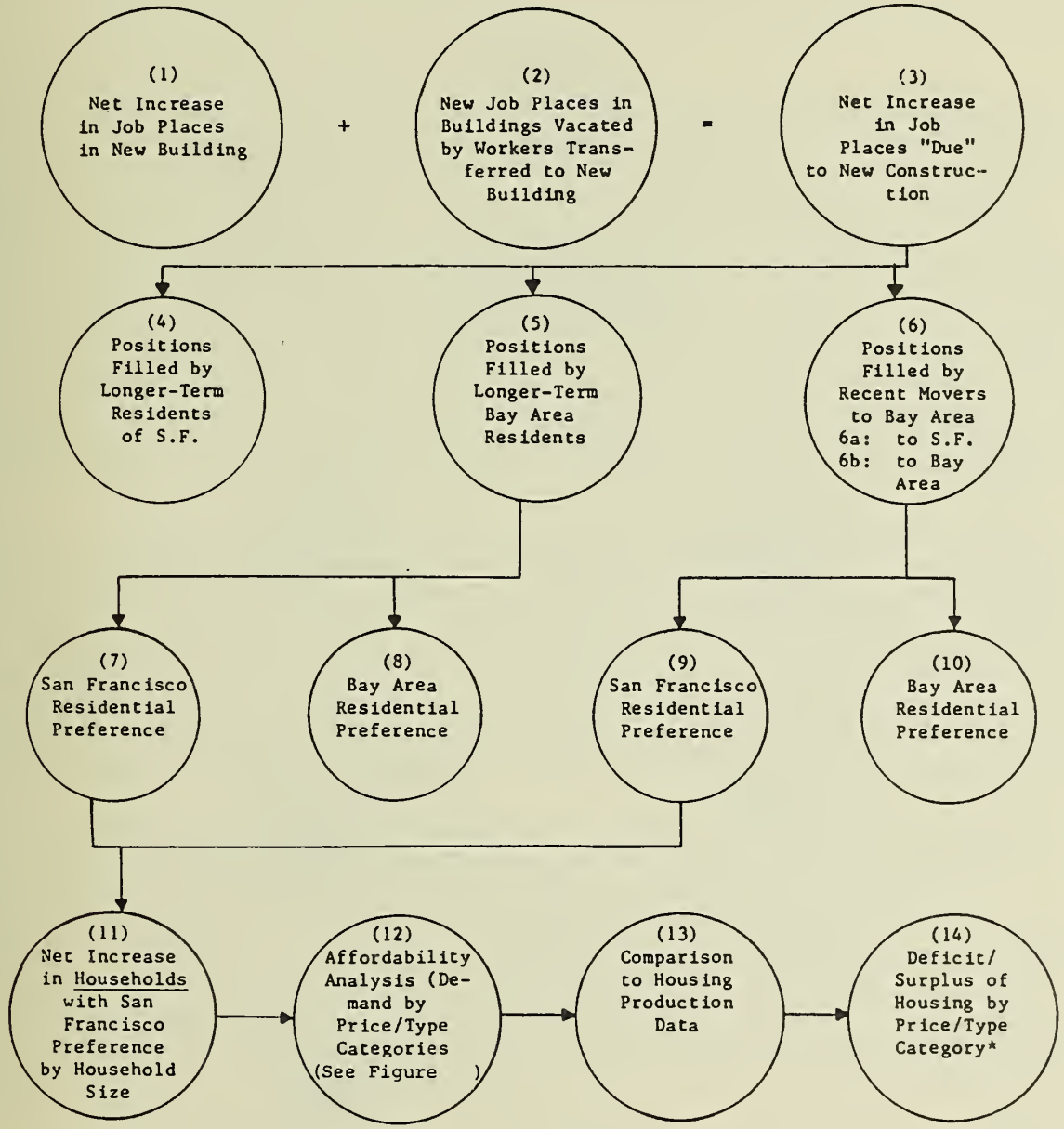
d. Montgomery-Washington Building FEIR, 81.104E, certified January 28, 1982. The median salary of wage earners at 601 Montgomery St. was estimated to be $52,560 and the highest salary for corporate officers $300,000, based on a 1981 survey.

e. City Planning and Information Services, "1980 Census Information," March 1982:
1. median rent 2. median noncondominium housing value
Rental data include residential hotels whose rent levels may be substantially lower than other types of rental dwellings and may therefore have an effect on the median rent.

f. Department of City Planning, "Rent Survey," 1980. Median rents are for:
1. studio apartments 2. all units 3. 3+ bedrooms
These data are based on a small nonrandom sample of newspaper ads and may not reflect true rental costs.

g. San Francisco Board of Realtors, "Multiple Sales Service," October 5, 1981. (Annual data on housing sales prices including all homes sold from February 11, 1981 to October 1, 1981):
1. lowest price 2. median price 3. highest price

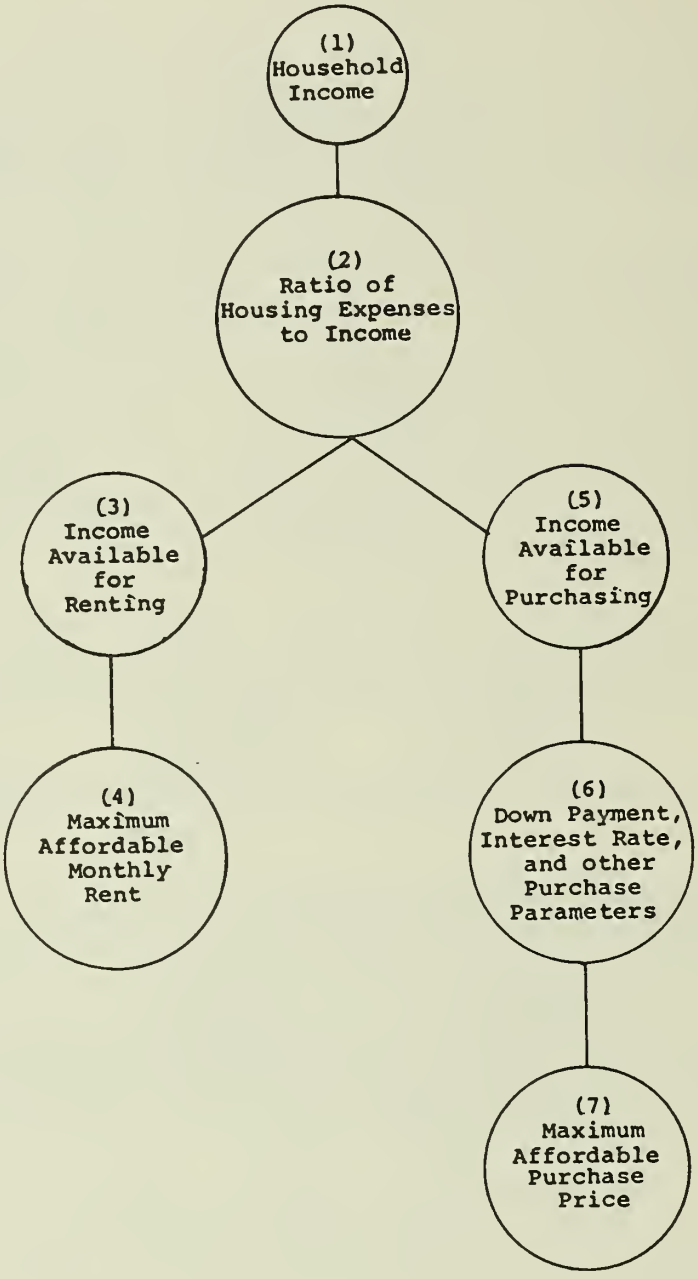
SOURCE: Environmental Science Associates, Inc.




* Demand due to citywide employment growth need also be considered here.

**FIGURE D-1:**
**Housing Demand and Affordability Model for New, High-Rise Office Building**

**SOURCE: Questor Associates, June 1982**




SOURCE: Questor Associates, June 1982

FIGURE D-2:
Individual Household
Affordability Model

## APPENDIX E: TRANSPORTATION, CIRCULATION AND PARKING

### CUMULATIVE DEVELOPMENT TRAVEL DEMAND

Travel demand from the 16.1 million gross square feet of net new cumulative office development and 535,000 gross square feet of net new cumulative retail development in downtown San Francisco has been estimated using a land-use approach for trip generation. Future travel into the downtown has been assumed to be a result of construction and occupancy of downtown office and retail space. The Office of Environmental Review of the Department of City Planning has identified office projects in the greater downtown area as being under formal review, approved or under construction. Table E-1 shows the list of projects separated by review status and includes Assessor's Block number and City case number for each project. Table E-2 contains the total gross square feet of office and retail space for each review status category. The information contained in these tables represents the best data available from the Department of City Planning at the time of preparation of this document.

The list of projects shown in Table E-1 and the development totals shown in Table E-2 include all office projects in the greater downtown area and the south of Market area that are under construction or have been approved, and all projects for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined, and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission. Projects that were not definitive and/or appear to be inactive or withdrawn by the project sponsor were not included in the cumulative analyses.

Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit. Residential projects have not been included because residential travel in the downtown is generally in the contra-commute direction during peak-hours and because the office trip generation rate and modal split distribution are predicated on the assumption that housing would be available in the City. Thus inclusion of residential projects would be double counting of project generated travel.

TABLE E-1: CUMULATIVE OFFICE DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF AUGUST 6, 1982

Projects under Formal Review 8/6/82

| Assessor's Block | Case No. | Project Name |
|---|---|---|
| 58 | 82.234ED | Roundhouse |
| 112 | 81.258 | Ice House Conversion (C) |
| 136 | 81.245 | 955 Front at Green |
| 176 | 81.673 | Columbus/Pacific Savoy |
| 228 | 81.610ED | 569 Sacramento (C) |
| 240 | 81.705ED | 580 California/Kearny |
| 2265 | 81.195ED | 388 Market at Pine |
| 269 | 81.132ED | Russ Tower Addition |
| 270 | 81.175ED | 466 Bush |
| 288 | 81.461ED | 333 Bush (Campeau) |
| 288 | 81.687ED | 222 Kearny/Sutter |
| 669 | 81.667ED | 1361 Bush (C) |
| 716 | 81.581ED | Polk/O'Farrell |
| 3702 | 81.549ED | 1145 Market |
| 3703 | 81.494ED | 1041-49 Market |
| 3707 | 81.492ED | 90 New Montgomery |
| 3707 | 81.245C | New Montgomery Pl. |
| 3708 | 81.493ED | 71 Stevenson |
| 3733 | 82.29E | 832 Folsom |
| 3760 | 81.386 | 401 6th |
| 3776 | 81.59 | Welsh Commons |
| 3778 | 81.630ED | 548 5th/Brannan |
| 3781 | 82.99E | Greyhound Bus Terminal |
| 3786 | 82.33E | 655 5th/Townsend |
| 3789 | 82.31EV | 615 2nd/Brannan (C) |
| 9900 | 81.63 | Ferry Building Rehab |
| 9900 | | Pier One Development |
| 9900 | | Agriculture Building |

Approved Projects 8/6/82

| | | |
|---|---|---|
| 106 | 81.415ED | 1299 Sansome |
| 161 | 80.191 | Mirawa Center |

(continued on next page)

Approved Projects 8/6/82 (continued)

| Assessor's Block | Case No. | Project Name |
|---|---|---|
| 164 | 81.631D | 847 Sansome |
| 164 | 81.573D | 50 Osgood Place |
| 166 | CU81.7 | 222 Pacific (C) |
| 166 | 80.15 | 750 Battery |
| 206 | 81.165D | 401 Washington at Battery |
| 227 | 80.296 | Bank of Canton |
| 261 | 81.249ECQ | 333 California |
| 262 | 81.206D | 130 Battery |
| 267 | 81.241D | 160 Sansome |
| 268 | 81.422D | 250 Montgomery at Pine |
| 271 | 81.517 | 453 Grant |
| 271 | | 582 Bush |
| 294 | 82.870 | 44 Campton Place |
| 311 | 82.120D | S.F. Federal |
| 351 | DR79.24 | Mardikian/1170-1172 Market |
| 3512 | 82.14 | Van Ness Plaza |
| 3518 | 81.483V | 291 10th St. |
| 3705 | 80.315 | Pacific III Apparel Mart |
| 3709 | 81.113ED | Central Plaza |
| 3715 | 82.16EC | 121 Steuart |
| 3717 | 80.349 | Spear/Main (160 Spear) |
| 3717 | 82.82D | 135 Main |
| 3722 | 81.548DE | 466 Clementina (C) |
| 3722 | 81.417ED | 144 Second at Minna |
| 3724 | 81.102E | Holland Ct. (C) |
| 3729 | 82.860 | 774 Tehama |
| 3733 | 81.2 | 868 Folsom |
| 3735 | 80.106 | 95 Hawthorne (C) |
| 3738 | DR80.5 | 315 Howard |
| 3741 | 82.203C | 201 Spear |
| 3749 | 81.18 | Marathon - 2nd & Folsom |
| 3751 | 77.220 | National Maritime Union |
| 3752 | 77.220 | Office Bldg. (YBC SB-1) |
| 3763 | 81.287V | 490 2nd at Bryant (C) |
| 3763 | 81.381 | 480 2nd at Stillman (C) |
| 3775 | 81.147V | 338-340 Brannan (C) |
| 3776 | 81.693EV | 539 Bryant/Zoe |
| 3788 | 81.296Z | 690 2nd/Townsend (C) |
| 3787 | 81.306 | 252 Townsend at Lusk |
| 3789 | 81.552EV | 625 2nd/Townsend (C) |
| 3794 | 81.569EV | 123 Townsend |
| 3803 | 81.244D | China Basin Expansion |

Projects under Construction 8/6/82

| | | |
|---|---|---|
| 163 | 81.1 | 901 Montgomery |
| 164 | 81.251D | 936 Montgomery-(disco) |
| 167 | | Golden Gateway III |
| 196 | | 736 Montgomery |
| 196 | CU79.49 | Pacific Lumber Co. |
| 208 | 81.104EDC | Washington/Montgomery |

(continued on the next page)

Projects under Construction 8/6/82 (continued)

| Assessor's Block | Case No. | Project Name |
|---|---|---|
| 237 | DR80.6 | 353 Sacramento (Daon) |
| 239 | DR80.1 | 456 Montgomery |
| 240 | DR80.16 | 550 Kearny |
| 263 | CU79.12 | 101 California |
| 287 | 81.550D | Sloane Building (C) |
| 288 | DR80.24 | 101 Montgomery |
| 289 | 81.308D | One Sansome |
| 292 | DR79.13 | Crocker National Bank |
| 312 | 79.370 | 50 Grant |
| 351 | 79.133 | U.N. Plaza |
| 762 | | Opera Plaza |
| 3702 | 81.25 | 1155 Market/8th |
| 3708 | 80.34 | 25 Jessie/Ecker Square |
| 3709 | 80.36 | Five Fremont Center |
| 3712 | 79.11 | Federal Reserve Bank |
| 3715 | | 141 Steuart |
| 3717 | 79.236 | 101 Mission at Spear |
| 3717 | | 150 Spear |
| 3718 | 79.12 | Pacific Gateway |
| 3724 | | Yerba Buena West |
| 3735 | | Convention Plaza |

* (C) - Conversion (generally industrial and/or warehouse to office)
SOURCE: Department of City Planning.

TABLE E-2: GROSS SQUARE FEET OF CUMULATIVE OFFICE AND RETAIL DEVELOPMENT* IN DOWNTOWN SAN FRANCISCO AS OF AUGUST 6, 1982

| | Office (Gross Sq. Ft.) | | Retail (Gross Sq. Ft.) | |
|---|---|---|---|---|
| Status of Project | Total New Constr. | Net New Constr. | Total New Constr. | Net New Constr. |
| Under Formal Review | 4,220,970 | 3,801,570 | 310,650 | 249,150 |
| Approved | 5,428,350 | 4,862,600 | 187,850 | 150,310 |
| Under Construction | 7,753,050 | 7,427,350 | 260,250 | 136,050 |
| GRAND TOTALS | 17,402,370 | 16,091,520 | 758,750 | 535,510 |

* Includes all office projects in the greater downtown area and the south of Market area for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved. It does not include projects in Rincon Point - South Beach or Yerba Buena Center Redevelopment Areas for which no Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission, as it is not possible to know what development will be approved in these areas. It does not include Mission Bay as no formal proposal has been submitted to the City.

SOURCE: Department of City Planning.

Two redevelopment areas (Yerba Buena Center and Rincon Point - South Beach) and one private development (Mission Bay) are located in or near the greater downtown area. In the redevelopment areas the majority of building sites do not yet have Land Disposition Agreements (LDA) approved. Until such time as specific LDA's are approved, no estimate of travel demand can be made (thus, parcels for which no LDA exists have not been included in the cumulative analyses). Development in the Yerba Buena Center (YBC) Redevelopment Area will be in accordance with the YBC Redevelopment Plan, as amended. Possible land uses that would be in accordance with the Yerba Buena Center Redevelopment Area Plan include commercial entertainment, convention facility (in place), cultural, downtown support service, exhibit/ballroom space, hotel rooms, institutional, light industry, market-rate dwelling units, subsidized dwelling units, office, park or plaza, pedestrian concourse, parking and, retail./1/ Possible land uses in the Rincon Point - South Beach Redevelopment

Area include hotel, housing, office, open space, public parking, retail and, warehouse uses./2/ Mission Bay has not been included in the cumulative analyses as no Preliminary Draft EIR has been submitted to the City and it is uncertain what formal proposal may be made. Existing office and retail space that would be replaced by new buildings was subtracted from the proposed new construction to better approximate the impacts the new buildings would have on transportation facilities. As shown in Table E-2, net new office and retail space is less than total new construction as a result of subtracting out existing office and retail space on sites proposed for new buildings. "Net new" space is used to refer to the amount of new construction in excess of existing space on each site in terms of gross square feet of floor space. It does not refer to net leasable or net rentable floor space).

Estimates of future travel have been made using trip generation rates of 17.5 person trip ends (one way trips) per 1,000 net leasable square feet of net new office space and 100 person trip ends (pte) per 1,000 gross square feet of net new retail space./3/ Gross square feet of office space was converted to net leasable square feet by assuming an efficiency factor of 80%. The retail space has been assumed to be primarily "ground-floor retail" which would serve the office building users. Based upon survey data collected at the Embarcadero Center, approximately 45% of the travel generated by "ground-floor retail" uses has been assumed to be oriented to the office uses on-site and is already included in the office trip generation rate. Thus, 55% of the retail trip generation has been assumed to be "new" to each site./4/

P.M. peak-hour travel from the cumulative development was assigned to modes of travel based upon the regional distribution and modal split shown in Table E-3. During the p.m. peak hour about 20% of the office travel and 10% of the retail travel was assumed to occur. Of the office travel approximately 90% [during peak-hours] was assumed to be work-related and 10% was assumed to be other travel. On a daily basis, office travel was assumed to be 57% work-related and 43% other travel./5/

To calculate vehicle trip ends, average automobile occupancies were assumed for each regional area based upon available data. Currently, commute travel to the East Bay is about 1.8 persons per vehicle; the north Bay is about 1.5

persons per vehicle; and to the southern Peninsula is about 1.2 persons per vehicle./6/ San Francisco auto occupancy was assumed to be 1.4 persons per vehicle./7/

A basic assumption in all of the transportation analyses is that existing regional distributions and modal splits would continue into the future unchanged. Thus, the implicit assumption has been made that about 40% of the future employees would live in San Francisco. If housing is not available in the City then a greater impact than noted would result on the commute corridors into the City from the North Bay, East Bay and Southern Peninsula. If housing is not available in the City, however, the impact on the MUNI would be less than noted because City residents are the majority of Muni users.

The availability of short-term parking was estimated in an area within 1000 feet of the project (which was assumed to represent a 5 minute walking time). Projects proposed and under construction that would generate short-term parking demand within the 1000 ft. radius area were identified and the short-term parking demand was summed to give a projection of short-term demand. Long-term parking demand was based upon the number of expected work-related auto trips into the downtown. Parking supply was estimated over the greater downtown and South of Market area as travel time from parking space to final destination was no longer assumed to be the primary determinant for parking selection.

Vehicle travel and parking demand have been based upon demand projections and are unconstrained by the ability of the freeway and bridge system to carry the additional demand. Freeway and bridge capacity into downtown is essentially fixed at existing levels as major construction would be required to add new capacity. Current levels of vehicle traffic on the freeway and bridge system are at or near capacity. Thus, if the projection of person trip ends in autos is assumed to be correct, the levels of vehicle occupancy would have to increase in the future as the freeway and bridge system could not handle the increase in single-occupant autos. If vehicle occupancy were to increase, vehicle trip ends and subsequent parking demand would be less than projected. Alternately, the peak hours level of demand could spread into hours adjacent to the peak hour (as is currently happening). However, there is a finite limit as to how far the peak can spread over time and still allow business to function.

TABLE E-3: PROJECT TRAVEL DISTRIBUTION AND MODAL SPLIT

| | RESIDENTIAL | | | | | | OFFICE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Work Travel (22%) | | | Other Travel (78%) | | | Work Travel (57%) | | | Other Travel (43%) | | | Retail Travel | | |
| Geographic Area | Geog. % | Mode | % | Geog. % | Mode | % | Geog. % | Mode | % | Geog. % | Mode | % | Geog. % | Mode | % |
| San Francisco | | | | | | | | | | | | | | | |
| Downtown/Northeast | 75.0 | Auto | 4.0 | 75.0 | Auto | 5.0 | 7.0 | Auto | 9.0 | 33.0 | Auto | 2.0 | 82.0 | Auto | 3.0 |
| (East of Van Ness, | | Muni | 55.0 | | Muni | 75.0 | | Muni | 61.0 | | Muni | 20.0 | | Muni | 7.0 |
| North of Market | | BART | 1.0 | | BART | 10.0 | | BART | 1.0 | | BART | 0.0 | | BART | 1.0 |
| to the Embarcadero, | | Walk | 40.0 | | Walk | 10.0 | | Walk | 29.0 | | Walk | 78.0 | | Walk | 89.0 |
| South of Market to 101) | | | | | | | | | | | | | | | |
| Northwest | 10.0 | Auto | 20.0 | 15.0 | Auto | 25.0 | 15.0 | Auto | 31.0 | 11.0 | Auto | 15.0 | 1.0 | Auto | 10.0 |
| (Richmond,Marina | | Muni | 80.0 | | Muni | 75.0 | | Muni | 69.0 | | Muni | 85.0 | | Muni | 90.0 |
| Western Addition) | | | | | | | | | | | | | | | |
| Southwest | 5.0 | Auto | 25.0 | 5.0 | Auto | 25.0 | 13.0 | Auto | 29.0 | 13.0 | Auto | 12.0 | 2.0 | Auto | 10.0 |
| (Sunset,Parkside, | | Muni | 65.0 | | Muni | 65.0 | | Muni | 62.0 | | Muni | 69.0 | | Muni | 90.0 |
| Ingleside,Excelsior, | | BART | 10.0 | | BART | 10.0 | | BART | 9.0 | | BART | 19.0 | | BART | 0.0 |
| Twin Peaks, and Upper Market) | | | | | | | | | | | | | | | |
| Southeast | 4.0 | Auto | 20.0 | 2.0 | Auto | 50.0 | 5.0 | Auto | 26.0 | 7.0 | Auto | 13.0 | 2.0 | Auto | 10.0 |
| (Potrero Hill, Bayview, | | Muni | 55.0 | | Muni | 40.0 | | Muni | 52.0 | | Muni | 38.0 | | Muni | 80.0 |
| Hunters Point, | | BART | 25.0 | | BART | 10.0 | | BART | 22.0 | | BART | 50.0 | | BART | 10.0 |
| East and South of 101) | | | | | | | | | | | | | | | |
| Peninsula | 4.0 | Auto | 44.0 | 1.0 | Auto | 80.0 | 18.0 | Auto | 44.0 | 8.0 | Auto | 80.0 | 3.0 | Auto | 25.0 |
| (San Mateo and Santa | | Muni | 3.0 | | Muni | 0.0 | | Muni | 3.0 | | Muni | 0.0 | | Muni | 0.0 |
| Clara Counties) | | BART | 19.0 | | BART | 0.0 | | BART | 19.0 | | BART | 0.0 | | BART | 25.0 |
| | | SamT | 7.0 | | SamT | 3.0 | | SamT | 7.0 | | SamT | 30.0 | | SamT | 0.0 |
| | | SPRR | 27.0 | | SPRR | 17.0 | | SPRR | 27.0 | | SPRR | 10.0 | | SPRR | 50.0 |
| East Bay | 2.0 | Auto | 33.0 | 1.0 | Auto | 80.0 | 30.0 | Auto | 33.0 | 20.0 | Auto | 12.0 | 7.0 | Auto | 38.0 |
| (Alameda and Contra | | BART | 37.0 | | BART | 11.0 | | BART | 37.0 | | BART | 79.0 | | Bart | 62.0 |
| Costa Counties) | | A-C | 30.0 | | A-C | 9.0 | | A-C | 30.0 | | A-C | 8.0 | | A-C | 0.0 |
| North Bay | | | | 1.0 | Auto | 73.0 | 12.0 | Auto | 58.0 | 8.0 | Auto | 70.0 | 3.0 | Auto | 70.0 |
| (Marin and Sonoma | | | | | GGTB | 19.0 | | GGTB | 35.0 | | GGTB | 20.0 | | GGTB | 30.0 |
| Counties) | | | | | GGTF | 8.0 | | GGTF | 7.0 | | GGTF | 10.0 | | GGTF | 0.0 |

SOURCE: San Francisco Department of City Planning, TJKM, Environmental Science Associates.

Transit demand has been projected based upon existing travel patterns and is not dependent upon the availability of transit capacity. Two levels of operations (load factor) calculations have been made. One load factor has been calculated based upon existing capacity and is intended to represent conditions that would result if no improvements are made to the transit system. The second load factor is calculated based upon forecast capacity (as defined in each agency's five-year plan) and is intended to portray conditions that would result if planned, scheduled improvements are made. Table E-4 shows the existing transit conditions and Table E-5 shows the Muni line-by-line analysis.

INTERSECTION ANALYSIS

The capacity analysis of each intersection at which a turning movement count was made utilized the "critical lane" method. This method of capacity calculation is a summation of maximum conflicting approach lane volumes that gives the capacity of an intersection in vehicles per hour per lane. (This method is explained in detail in an article entitled "Intersection Capacity Measurement Through Critical Movement Summations: A Planning Tool," by Henry B. McInerney and Stephen G. Peterson, January 1971, Traffic Engineering. This method is also explained in "Interim Materials on Highway Capacity", Transportation Research Circular No. 212, Transportation Research Board, January 1980). The maximum service volume for Level of Service E was assumed as intersection capacity. A service volume is the maximum number of vehicles that can pass an intersection during a specified time period in which operating conditions are maintained corresponding to the selected and specified Level of Service (see Table E-6). For each intersection analyzed, the existing peak-hour volume was computed and a volume-to-capacity (v/c) ratio was calculated by dividing the existing volume by the capacity at Level of Service E. Table E-7 shows the lane capacities used in this analysis.

TABLE E-4: EXISTING PEAK HOUR TRANSIT RIDERSHIPS AND CAPACITIES (Selected Routes;* Peak Direction Only)

| | Riders | Vehicles | Capacity+ Seated | Capacity+ Total | Load Factor Seated | Load Factor Total | Peak |
|---|---|---|---|---|---|---|---|
| Muni | | N/A | | | | | p.m. |
| BART: | | | | | | | |
| TransBay | 13,600 | 140** | 10,085 | 15,130 | 1.35 | 0.90 | p.m. |
| Westbay | 6,445 | 97** | 6,985 | 10,480 | 0.92 | 0.61 | p.m. |
| A-C Transit | 9,850 | 214 | 10,695 | 13,360 | 0.89 | 0.72 | p.m. |
| SamTrans | 1700 | 37 | 1740 | 2,180 | 0.98 | 0.78 | a.m. |
| So. Pacific RR | 5,180 | 9 | 6,590 | 6,590 | 0.78 | 0.78 | a.m. |
| Golden Gate Transit: | | | | | | | |
| Motor Coach | 4,510 | 117 | 5,700 | 6,870 | 0.79 | 0.66 | a.m. |
| Ferry | 800 | 3 | 1,410 | 2,075 | 0.57 | 0.39 | a.m. |

* Muni: See Table E-5
SamTrans: Lines 7F, 7B, 5M, 7R, 1C, 25, 10T, 10L, 7A, 7Z, 22D.
A-C Transit: Lines A,B,BX,C,CH/CB,E,EX,F,FSG/FX,G,H,K,KH,L,LX,N,NX,O,OX, R/RH,RD/RF/RCV,S,SW,V,W,Y.

** BART data is on a per car basis. Sixteen trains operate in the peak hour. Eastbound: 7 Concord trains (average 10 cars per train); 5 Fremont trains (average 10 cars per train); and 4 Richmond trains (average 5 cars per train), Westbound: 12 trains.

*** Capacity has been calculated based on the following per-vehicle capacities:

| | Seated Passengers | Recommended Maximum (Total Seated and Standing Passengers) |
|---|---|---|
| MUNI: Motor Coach (average) | 45 | 68 |
| Trolley Coach | 50 | 72 |
| LRV | 68 | 150 |
| BART | 72 | 108 |
| A-C Transit (Average) | 48 | 60 |
| SamTrans | 47 | 59 |
| CalTrans Peninsula Train | 100/150 | 100/150 |
| Golden Gate Transit Motor Coach | 45 | 55 |
| Sausalito Ferry | 400 | 575 |
| Larkspur Ferry | 510 | 750 |

TABLE E-4: EXISTING PEAK HOUR TRANSIT RIDERSHIPS AND CAPACITIES (Selected Routes;* Peak Direction Only) (continued)

Publicly available data was supplied by the agencies and personnel indicated below.

| AGENCY | DATA | PERSONNEL | DATE |
|---|---|---|---|
| BART | Data Acquisition System Representative P.M. Peak Load Factors for March 1982 | W. Belding Sr. Economic Analyst | June 9, 1981 |
| A-C Transit | Schedule Checks on Various Weekdays in 1982 | Kay More, AC Transit | June 15, 1982 |
| SamTrans | Ridership Analysis Service into San Francisco February 1982 | G. Kipp Sam Trans | June 14, 1982 |
| CalTrans | CalTrain Ridership Report March 23, 1982 | Elmer Hall | June 14, 1982 |
| Golden Gate Transit | Monthly Reports June 1982 | A. Zahradnik Transportation Planner | July 1, 1982 |

TABLE E-5: EXISTING AND PROJECTED MUNI LOAD FACTORS*
(PM PEAK HOUR -- OUTBOUND DIRECTION)

| | RIDERSHIP | | | | LOAD FACTORS | | | |
|---|---|---|---|---|---|---|---|---|
| Line | Existing | Future w/o project | project | Future w/project | Existing | Future w/o project | Future w/project | project |
| PM PEAK HOUR OUTBOUND MUNI ANALYSIS FOR 333 BUSH (CAMPEAU) TOTAL PROJECT RIDERS = 155. | | | | | | | | |
| 1 | 1453. | 1944. | 23. | 1967. | 0.93 | 1.25 | 1.26 | 0.02 |
| 1X | 640. | 866. | 10. | 876. | 1.11 | 1.50 | 1.52 | 0.02 |
| 2 | 474. | 660. | 7. | 667. | 1.10 | 1.53 | 1.54 | 0.02 |
| 3 | 520. | 698. | 8. | 706. | 1.08 | 1.45 | 1.47 | 0.02 |
| 4 | 467. | 627. | 7. | 634. | 1.08 | 1.45 | 1.47 | 0.02 |
| 5 | 981. | 1491. | 15. | 1506. | 0.94 | 1.43 | 1.44 | 0.02 |
| 6 | 544. | 827. | 8. | 835. | 0.84 | 1.28 | 1.29 | 0.02 |
| 7 | 407. | 619. | 6. | 625. | 0.77 | 1.17 | 1.18 | 0.02 |
| 8 | 657. | 999. | 10. | 1009. | 0.74 | 1.13 | 1.14 | 0.02 |
| 9 | 468. | 711. | 7. | 718. | 0.89 | 1.35 | 1.36 | 0.02 |
| 11 | 184. | 279. | 3. | 282. | 0.64 | 0.97 | 0.98 | 0.01 |
| 12 | 451. | 685. | 7. | 692. | 0.85 | 1.30 | 1.31 | 0.02 |
| 14 | 1038. | 578. | 16. | 1594. | 0.92 | 1.40 | 1.41 | 0.02 |
| 14GL | 205. | 311. | 3. | 314. | 0.71 | 1.08 | 1.09 | 0.02 |
| 14X | 344. | 482. | 5. | 487. | 0.68 | 0.96 | 0.97 | 0.02 |
| 15 | 632. | 919. | 10. | 929. | 0.88 | 1.28 | 1.29 | 0.02 |
| 17X | 162. | 217. | 3. | 220. | 0.64 | 0.86 | 0.87 | 0.01 |
| 21 | 643. | 977. | 10. | 987. | 0.85 | 1.29 | 1.31 | 0.02 |
| 27 | 145. | 203. | 2. | 205. | 0.58 | 0.80 | 0.81 | 0.01 |
| 30 | 1415. | 1930. | 22. | 1952. | 0.92 | 1.26 | 1.27 | 0.02 |
| 30X | 435. | 586. | 7. | 593. | 0.86 | 1.16 | 1.18 | 0.02 |
| 31 | 657. | 933. | 10. | 943. | 1.07 | 1.52 | 1.54 | 0.02 |
| 31X | 413. | 559. | 6. | 565. | 0.96 | 1.29 | 1.31 | 0.02 |
| 38 | 1963. | 2722. | 31. | 2753. | 1.01 | 1.40 | 1.42 | 0.02 |
| 38AX | 453. | 613. | 7. | 620. | 1.26 | 1.70 | 1.72 | 0.02 |
| 38BX | 272. | 368. | 4. | 372. | 0.96 | 1.30 | 1.32 | 0.02 |
| 41TC | 119. | 165. | 2. | 167. | 0.41 | 0.57 | 0.58 | 0.01 |
| 41MC | 184. | 256. | 3. | 259. | 0.43 | 0.59 | 0.60 | 0.01 |
| 42 | 393. | 591. | 6. | 597. | 0.99 | 1.49 | 1.51 | 0.02 |
| 45 | 561. | 752. | 9. | 761. | 0.90 | 1.21 | 1.22 | 0.02 |
| 66L | 555. | 736. | 9. | 745. | 0.77 | 1.02 | 1.03 | 0.02 |
| 71 | 447. | 679. | 7. | 686. | 1.10 | 1.66 | 1.68 | 0.02 |
| 80X | 416. | 583. | 6. | 589. | 0.83 | 1.16 | 1.17 | 0.02 |
| J | 909. | 1382. | 14. | 1396. | 0.84 | 1.27 | 1.28 | 0.02 |
| KLMN | 5725. | 8700. | 89. | 8789. | 0.96 | 1.45 | 1.47 | 0.02 |

*The load factor is the ratio of ridership to existing capacity, where capacity is calculated from the recommended maximum loading of the transit vehicles which is 150% of seated capacity. As estimates of load factors, these should be regarded as approximate. Muni cordon points, where the ridership and capacity counts were made, do not necessarily correspond precisely to the point of maximum loading on each line. The future load factors have been calculated using existing capacity.

SOURCE: Department of City Planning; Environmental Science Associates, Inc.

TABLE E-6: VEHICULAR LEVELS OF SERVICE

| Level of Service | Description | Volume/Capacity* v/c Ratio |
|---|---|---|
| A | Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent. | 0.60 |
| B | Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can be generaly described as very good. | 0.61-0.70 |
| C | Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as good. | 0.71-0.80 |
| D. | Level of Service D describes a condition of increasing restiction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair. | 0.81-0.90 |
| E | Capacity occurs at level of service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting up-stream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor. | 0.91-1.00 |
| F | Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity. | 1.00 |

* Capacity is defined as Level of Service E.

SOURCE: San Francisco Department of Public Works, Traffic Division, Bureau of Engineering, 1965.

TABLE E-7: VEHICULAR LEVEL OF SERVICE GUIDELINES FOR VARIOUS PEDESTRIAN VOLUME LEVELS

| Pedestrians Volume Level | Pedestrians per hour (One Sidewalk) TJKM | SFDPW* | Level of Service E Maximum Lane Volume (Vehicles per Hour) |
|---|---|---|---|
| Light | less than 100 | | 1500 |
| Moderate | 100-200 | less than 300 | 1380 |
| Moderately High | 200-500 | 300-600 | 1150 |
| Very High | greater than 500 | 600 | 920 |

* San Francisco Department of Public Works levels are from a DPW worksheet, "Traffic Signal Priority Calculations, Pedestrian Volume Ranges".

SOURCE: TJKM, Transportation Consultants; San Francisco Department of Public Works

TABLE E-8: PEDESTRIAN FLOW REGIMEN

| FLOW REGIME | CHOICE | CONFLICTS | FLOW RATE (P/F/M)* Average | percent of Capacity used |
|---|---|---|---|---|
| Open | Free Selection | None | 0.5 | 0.0-3.0 |
| Unimpeded | Some Selection | Minor | 0.5-2 | 3.1-11.0 |
| Impeded | Some Selection | High Indirect Interaction | 2-6 | 11.1-33.0 |
| Constrained | Some Restriction | Multiple | 6-10 | 33.1-56.0 |
| Crowded | Restricted | High Probability | 10-14 | 56.1-78.0 |
| Congested | All Reduced | Frequent | 14-18 | 78.1-100.0 |
| Jammed** | Shuffle Only | Unavoidable | | above 100.0 |

* P/F/M = Pedestrians per foot of a effective sidewalk width per minute.
** For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.

SOURCE: Urban Space for Pedestrians, MIT Press, 1975, Cambridge, MA.

EMPLOYMENT TREND APPROACH TO CUMULATIVE ANALYSIS

In this and other San Francisco EIRs, a land-use type of approach has been used to estimate employment and the resultant transportation impacts of both the proposed project and cumulative development. An alternate type of approach is to forecast travel demand based upon regional projections of employment share (employment trend approach)./8/ Briefly, the fundamental differences between (and limitations of) the two approaches are:/9/

The land-use approach (as it has been applied in this EIR) has used net new office space actually proposed or under construction (less space in buildings demolished to make way for new buildings) as the basis for travel generation. The land-use approach assumes that literally all of the currently proposed development in the downtown area will be constructed and fully occupied within the time frame of the 333 Bush Street project development and occupancy. No allowance has been made for less than 100 percent occupancy, for proposed developments that are never constructed, or for those which would not be occupied within the time frame of the 333 Bush Street project.

The employment trend approach generates a total increase in employment in downtown that has taken account of loss of employment as industries and offices move out of the City, replacement of one type of industry with another (industry shifts), as well as, replacement of existing office space with new office space. The employment trend approach makes no implicit assumptions concerning occupancy rates or actual square footage of development constructed; rather, it generates total employment increases from a standpoint which assigns jobs by metropolitan sector (area) based upon extrapolation of past trends and which considers long-term industry shifts to, within, and away from each area.

Note that neither of the two approaches has attempted to project future changes in modal split.

To illustrate the differences in projections resulting from the two approaches, Table E-9, following, shows the total employment projections by the two methods (and the project's share thereof), the regional distribution of trips, and Muni's share of the new transit travel (and the project's share thereof).

As shown in the table, the employment trend approach predicts about 15 percent fewer employees in the downtown and about eight percent more riders on the Muni than does the land-use approach. The employment trend approach would thus approximate the transit demand impacts discussed on pages 14-15 of the EIR. Similar conclusions can be drawn for the other transit agencies.

TABLE E-9: COMPARISONS OF LAND-USE AND EMPLOYMENT TREND APPROACHES

| Approach | Downtown Employment Increase | Project Share* | Regional Trip Share S.F. | Pen. | E.B. | N.B. | Muni Peak-hour Increase** | Project Share*** |
|---|---|---|---|---|---|---|---|---|
| Land Use | 64,700 | 3.1% | 49% | 16% | 24% | 11% | 12,000 | 3.3% |
| Empl. Trend+ (maximum) | 56,100 | 3.6% | 50-54% | 19% | 17-21% | 10% | 12,900++ | 3.1% |

NOTE: As explained in the text, comparisons between the entries for the two approaches must be made with the understanding that the land-use approach reflects increases in employment and transit demand based solely upon increases in downtown office space, while the employment trend approach reflects total increases therein based upon historical trends. The differences among the regional trip share figures reflect these and the other differences between the two approaches.

*Employment generated by the proposed 333 Bush Street project, as a percent of the cumulative downtown employment increase.

**The Muni peak-hour increase is a demand projection (based upon existing and long-term employment trends) that is not dependent upon available or expected transit capacity.

***Muni peak-hour trips generated by the proposed 333 Bush Street project, as a percent of the cumulative downtown Muni peak-hour increase.

+These figures, represent the worst-case analysis under the employment trend approach reviewed and accepted by MTC, ABAG and Muni. Note that the land-use approach entries assume that an additional net new 16.1 million gross square feet of office space will come on line by late 1990.

++Based on 54 percent regional trip split to San Francisco (worst-case).

Several considerations concerning both of the methods need to be noted. The land-use approach, as it has been applied in San Francisco EIR's, analyzes impacts for the p.m. peak hour, whereas the employment trend approach analyzes the a.m. peak. Several reasons exist as to why one peak (or the other) may be the better one to analyze.

First, the p.m. peak may be more useful to analyze, in that actual observation shows that the p.m. peak has a greater overall effect on the local street network and transit system in the downtown area than does the a.m. peak, as more travel takes place during the p.m. peak. Also, transit service is more inclined to differ from scheduled times during the p.m. peak than during the a.m. peak, as operational delays have had an 8- to 10-hour period over which to accumulate. Finally, the on-ramps to the freeway/bridge system are greater bottlenecks (in the p.m. peak) than are the off-ramps (in the a.m. peak).

Conversely, the peaking characteristics of the a.m. peak may be more useful in that they are much sharper than those of the p.m. peak (i.e., a greater percentage of the peak-period travel occurs during a single hour). Also, as a result of the bridge system into San Francisco, travel inbound into the City is much easier to document, as tolls are collected on the inbound direction on the Golden Gate and Bay Bridges. Finally, a greater proportion of the travel occurring during the a.m. peak is employment-related; the p.m. peak also includes shopping and pleasure trips which are not directly affected by increased office space.

The land-use approach, as it has been used in this Supplemental EIR, examines the p.m. peak because it has been observed to be the worst case for congestion on the City transportation system. This analysis does not reflect the spreading of the p.m. peak that is currently occurring, as all of the new trips have been assumed to take place in a single hour.

While the land-use approach assumes all new office space is fully occupied, the assumption of a functional vacancy rate of 5 percent is not uncommon./8/ With 16.1 million square feet of new office space assumed in the land-use approach to be occupied by 1990, a 5 percent vacancy would amount to approximately 805,000 square feet, representing 7,200 employees (at 250 square feet per employee), 600 of which would ride Muni in the p.m. peak hour. This adjustment for vacancy would thus reduce Muni peak-hour impacts in the cumulative analysis stated above by these 600 riders.

The land-use approach calculations have assumed transit capacity to be fixed at existing levels. The OER memorandum/8/ points out, "It should be recognized that transportation is a more 'elastic' resource with many options for expansion including increasing existing capacity by using articulated vehicles, expanded car pool and van pool programs and increasing the peak commuter period through flex-time programs, among others."

If future office development does not occur along the lines of the past long-term trends as assumed in the employment trend approach, then the projections made in Working Paper I would be revised. The average annual growth during the period 1965-1980 was less than the growth per year proposed, approved, or under construction for the period 1980-1984. The employment trend approach assumes average growth through 1990 would be at the lower historic rate, reflecting activity fluctuations from the current rate including slowdowns due to changing business conditions.

Until a forecast exists to determine how the current decade's cycle of development may differ from the past, a judgment of the applicability of results from Working Paper I may not be made. Consequently, this EIR has retained the land-use approach and presented this comparison of the employment trend approach. Both methods should be looked upon as describing potential scenarios of future conditions.

NOTES

/1/ Land uses from Draft Second Supplement Yerba Buena Center Final Environmental Impact Report, San Francisco Department of City Planning May 28, 1982

/2/ Land uses from Rincon Point - South Beach Redevelopment Area, San Francisco, California, Final Environmental Impact Report/Environmental Impact Statement, San Francisco Department of City Planning certified November 5, 1980.

/3/ The regional distribution, office trip generation, trip purpose and peak hour percentage are from Attachment 1 of the Guidelines for Environmental Impact Review, Transportation Impacts Department of City Planning, October 1980 and the modal split assignment is from Attachment 2 supplemented by survey data collected by Environmental Science Associates, Inc.

/4/ Retail trip generation is from Trip Generation, Institute of Transportation Engineers (ITE), 1979. Rates have been adjusted from vehicle trip ends to person trip ends based upon an assumed vehicle occupancy of 1.4 persons per vehicle. The survey of retail travel was conducted by Environmental Science Associates at Embarcadero Center on Thursday, June 17, 1982 between 10:00 a.m. and 4:00 p.m.

/5/ The percentage of work and non-work trips is from the Guidelines (see note 1) and from Urban Travel Patterns for Hospitals, Universities, Office Buildings, and Capitols, Report No. 62, National Cooperative Highway Research Program.

/6/ East Bay auto occupancy is from data collected at the Bay Bridge toll plaza by the Metropolitan Transportation Commission; North Bay auto occupancy is from data collected at the Golden Gate Bridge toll plaza by the Golden Gate Bridge, Highway and Transportation District; Southern Peninsula auto occupancy is an estimate from CalTrans.

/7/ The occupancy rate is from The Downtown Traffic and Parking Study, San Francisco Department of Public Works, 1970.

/8/ Department of City Planning, Working Paper I, Projection of Long-range Transportation Demand, May, 1982, prepared in cooperation with the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG), and the Municipal Railway (Muni). Employment trend data was compiled by ABAG from trends in County Business Pattern (U.S. Department of Commerce, Bureau of the Census, March 12, 1979), with 1979 as the base year for future projections and regional distributions. Modal split data are from the 1975 Travel Survey prepared by MTC.

/9/ The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in future EIRs to give a more balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each approach.

K Ingleside - Van Ness Station

Wednesday, September 9, 1981 - 8:00 A.M. - Inbound

N Judah - Van Ness Station

Wednesday, September 16, 1981 - 5:00 P.M. - Outbound


38 Geary - Van Ness Ave. and O'Farrell St.

Wednesday, October 21, 1981 - 9:00 A.M. - Inbound


38 Geary - Van Ness Ave. and Geary Blvd.

Wednesday, October 21, 1981 - 4:20 P.M. - Outbound

SOURCE: Environmental Science Associates, Inc.

FIGURE E-1: Photographs of Peak Muni Loading Conditions

M Ocean View – Civic Center Station

Wednesday, September 9, 1981 – 8:20 A.M. – Inbound

L Taraval – Van Ness Station

Wednesday, September 16, 1981 – 4:50 P.M. – Outbound


14 Mission – Mission St. and S. Van Ness Ave.

Tuesday, September 29, 1981 – 5:45 P.M. – Outbound


N Judah – Irving St. and Ninth Ave.

Tuesday, September 29, 1981 – 8:20 A.M. – Inbound

SOURCE: Environmental Science Associates, Inc.

FIGURE E–2: Photographs of Peak Muni Loading Conditions


11 Hoffman – Mission St. and S. Van Ness Ave.

Wednesday, October 21, 1981 – 8:10 A.M. – Inbound


11 Hoffman – Mission St. and S. Van Ness Ave.

Tuesday, September 29, 1981 – 5:10 P.M. – Outbound




30X Marina Express – Bayshore Ave. and Arieta Ave.

Wednesday, October 7, 1981 – 8:00 A.M. – Inbound


J Church – Church St. and Duboce Ave.

Tuesday, September 29, 1981 – 9:00 A.M. – Outbound

SOURCE: Environmental Science Associates, Inc.

FIGURE E-3: Photographs of Peak Muni Loading Conditions

## APPENDIX F: SAN FRANCISCO AIR POLLUTANT SUMMARY 1978-1980

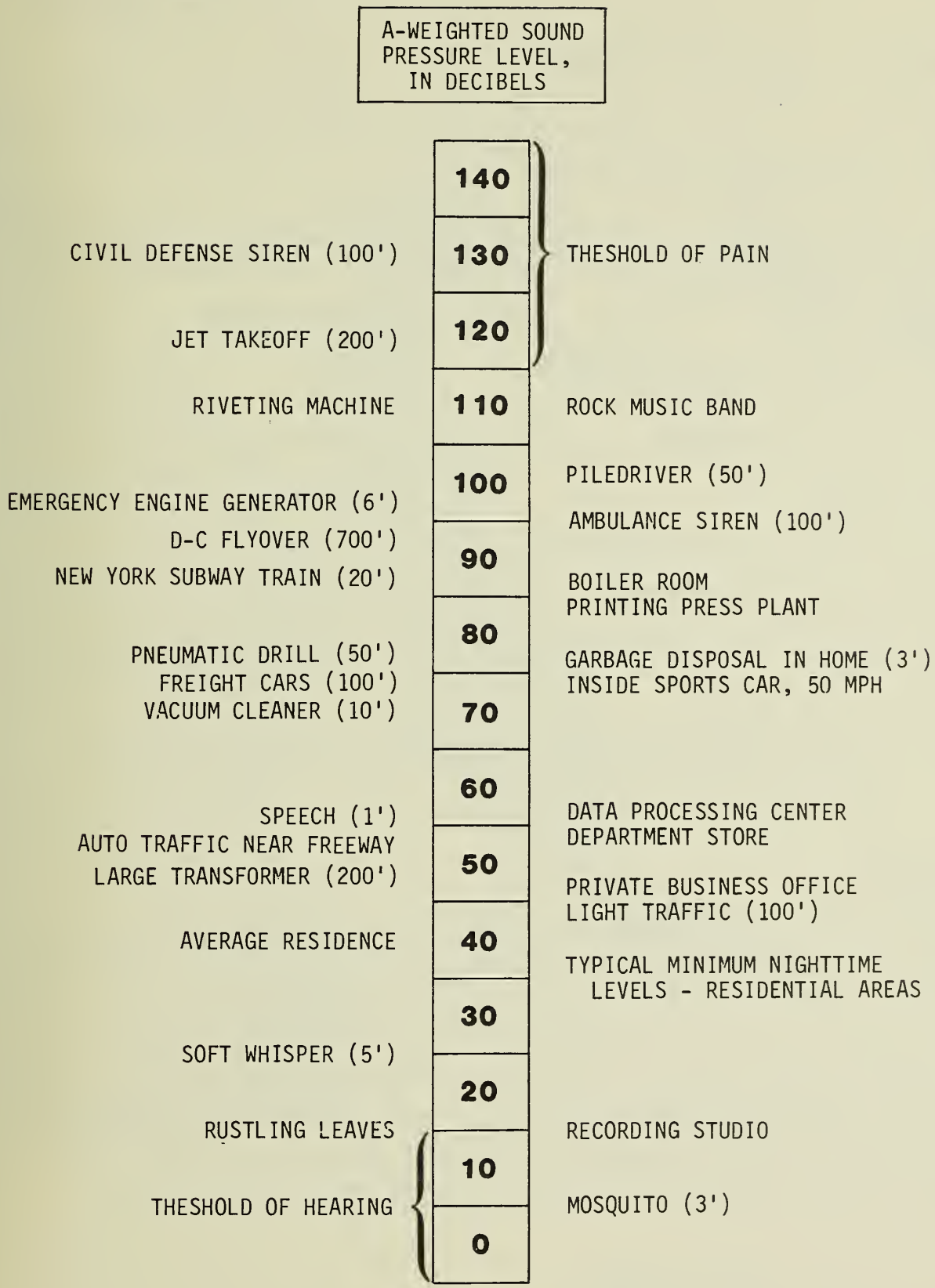
TABLE F-1: SAN FRANCISCO AIR POLLUTANT SUMMARY 1978-1980

STATION: 939 Ellis St. (1978-79) and 900 23rd St. (1980), San Francisco

| POLLUTANT: | STANDARD | 1978 | 1979 | 1980 |
|---|---|---|---|---|
| OZONE ($O_3$) (Oxidant) | | | | |
| 1-hour concentration (ppm /a/) | | | | |
| Highest hourly average | 0.10/b/ 0.12/c,d/ | 0.11 | 0.08 | 0.09 |
| Number of standard excesses (state) | | 2 | 0 | 0 |
| Expected Annual Excess (national)/d/ | | 0.3 | 0.0 | 0.0 |
| CARBON MONOXIDE (CO) | | | | |
| 1-hour concentration (ppm) | | | | |
| Highest hourly average | 35/c/ | 17 | 20 | 10 |
| Number of standard excesses | | 0 | 0 | 0 |
| 8-hour concentration (ppm) | | | | |
| Highest 8-hour average | 9/c/ | 9.4 | 13.8 | 7.5 |
| Number of standard excesses | | 1 | 1 | 0 |
| NITROGEN DIOXIDE ($NO_2$) | | | | |
| 1-hour concentration (ppm) | | | | |
| Highest hourly average | 0.25/b/ | 0.30 | 0.16 | 0.17 |
| Number of standard excesses | | 4 | 0 | 0 |
| SULFUR DIOXIDE ($SO_2$) | | | | |
| 24-hour concentration (ppm) | | | | |
| Highest 24-hour average | 0.05/b/ | 0.024 | 0.034 | 0.018 |
| Number of standard excesses/e,f/ | | 0 | 0 | 0 |
| TOTAL SUSPENDED PARTICULATE (TSP) | | | | |
| 24-hour concentration ($ug/m^3$ /g/) | | | | |
| Highest 24-hour average | 100/b/ | 128 | 117 | 173 |
| Number of standard excesses/f/ | | 1 | 1 | 6 |
| Annual concentration ($ug/m^3$) | | | | |
| Annual Geometric Mean | 60/b/ | 42.6 | 42.0 | 52.1 |
| Annual standard excess | | No | No | No |

/a/ ppm: parts per million.
/b/ California standard, not to be equaled or exceeded.
/c/ National standard, not to be exceeded more than once per year (except for annual standards which are not to be exceeded).
/d/ The national ozone standard was revised from 0.08 ppm to 0.12 ppm in January, 1979, and is now expressed in terms of the Expected Annual Excess, which is a three-year average of annual excesses of the 0.12 ppm value.
/e/ The sulfur dioxide standard is considered to be exceeded only if there is a concurrent excess of the state ozone or suspended particulate standards at the same station. Otherwise, the national standard of 0.14 ppm applies.
/f/ Number of observed excess days (measurements taken once every six days).
/g/ $ug/m^3$: micrograms per cubic meter.

SOURCE: BAAQMD, Air Pollution in the Bay Area by Station and Contaminant; and CARB, California Air Quality Data.




**SOURCE:** San Francisco Department of City Planning, Spear-Main FEIR

**FIGURE G-1: Typical Sound Levels Measured in the Environment and Industry**

APPENDIX H: GEOLOGY AND SEISMOLOGY

TABLE H-1: GEOLOGIC PROFILE OF SITE

Based on a geotechnical analysis by Harding Lawson Associates for the site, the following geologic profile is expected (starting at the surface):

| Geologic Material | Thickness of Layer |
|---|---|
| sand fill, poorly compacted with brick fragments, cinders and trash | 18 to 32 ft. |
| sand clay or clayey sand | 10 to 15 ft. |
| dense sand | 16 to 75 ft. |
| weathered bedrock - stiff, hard clay | 3 to 6 ft. |
| bedrock (depth below surface) | 57 to 113 ft. |

Water level was located at approximately 35 ft. below the ground surface in Spring, 1982.

SOURCE: Harding Lawson Associates, Geotechnical Investigation, 38 Story Office/Apartment Building, 333 Bush St. San Francisco, Ca..

SEISMOLOGY

The earthquake faults in the San Francisco Bay Region are shown in Figure H-1. Both the San Andreas and the Hayward Faults have a recent history of major and minor movements. Large and small earthquakes can be expected in this region in the future. Within the next 60 to 170 years (estimates of recurrence intervals vary), at least one earthquake of the magnitude of the 1906 San Francisco earthquake (about 8.3 on the Richter scale of magnitude) and several earthquakes comparable to the 1957 Daly City earthquake (about 5.3 on the Richter scale) may be expected to affect the proposed project.

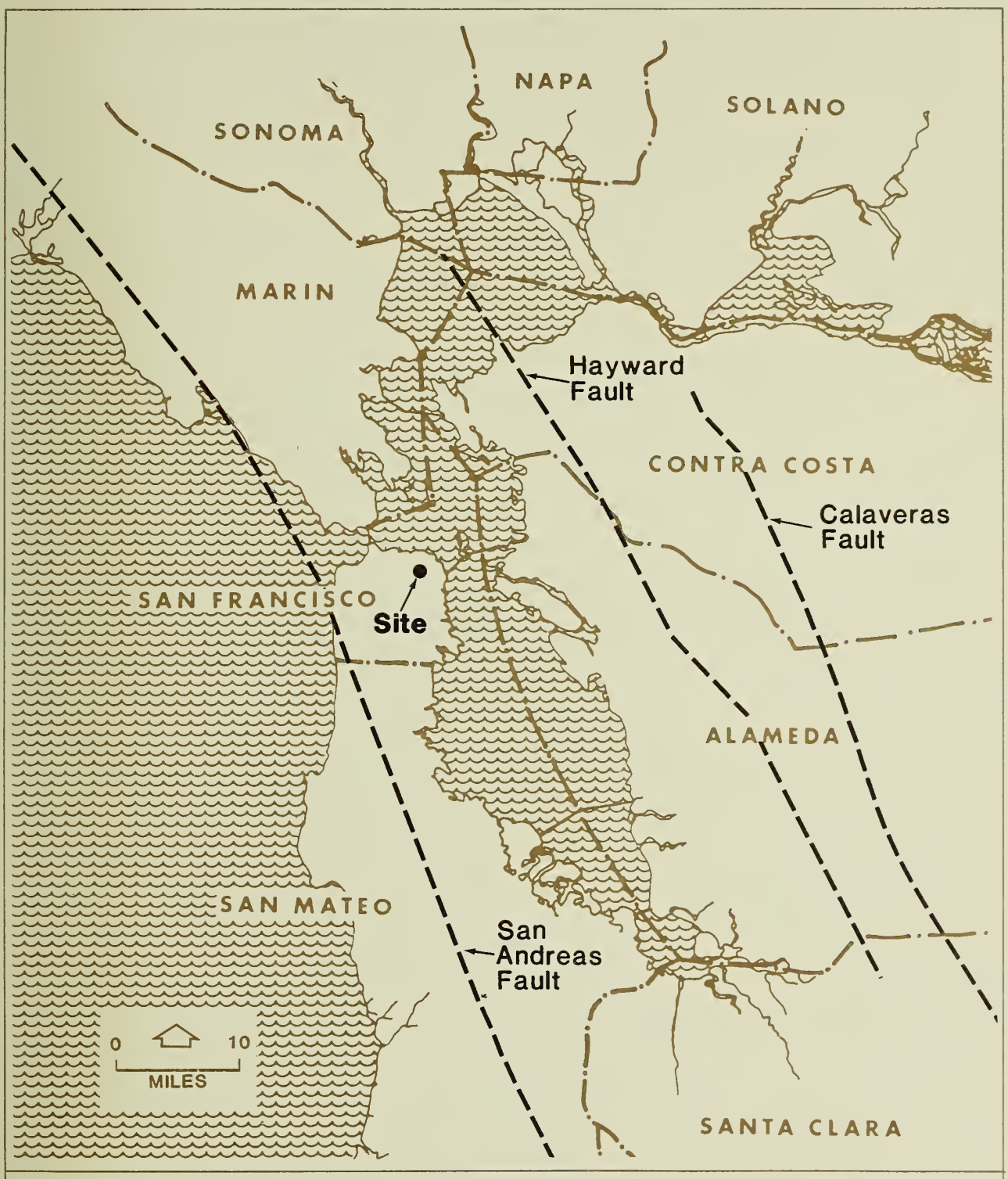



FIGURE H-1:
Major Active Faults in the
San Francisco Bay Area

SOURCE: Environmental Science Associates, Inc.